



**ANALYTICAL RESULTS REPORT
SITE INSPECTION**

CALMET

EPA ID # COD983767443

Prepared For:

**U. S. ENVIRONMENTAL PROTECTION AGENCY
REGION VIII**

**CONTRACT NO: 68-W9-0025
WORK ASSIGNMENT NO. 28-8JZZ**

September 14, 1994



MORRISON KNUDSEN CORPORATION

Engineering, Construction & Environmental Group

7100 East Belleview Avenue, Suite 300

Englewood, Colorado 80111

APPROVAL PAGE

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Mark Langford
MK TASK LEAD

9-14-94
DATE

Mark Langford for Marta Green
MK PRE-REMEDIAL MANAGER

9-14-94
DATE

BSmith
EPA SITE ASSESSMENT MANAGER

9/23/94
DATE

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1.0 INTRODUCTION

This Analytical Results Report (ARR) is prepared in partial fulfillment of Work Assignment Number 28-8JZZ issued to Morrison Knudsen Corporation, Environmental Services Division (MK) by the Region VIII office of the U.S. Environmental Protection Agency (EPA) under ARCS Contract Number 68-W9-0025. This ARR has been prepared as part of a Site Inspection of the Calmet site in Fountain, Colorado (EPA ID# COD983767443).

2.0 SITE DESCRIPTION

2.1 Site Location

The Calmet site is located at 1710 Rustique Drive in Fountain, Colorado on 1.3 acres of land. The site lies in the NW $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 31, T. 15 S., R. 65 W. in El Paso County (Figure 1). The site is bordered by residential areas to the north and east, railroad right-of-ways to the west and vacant land to the south (Figure 2).

2.2 Site History

Calmet operated an ore processing plant employing 19 people at the site from February, 1983 to November 3, 1988. Calmet of Colorado was a joint venture of the Calmet Corporation and Marco Investments, Inc. Calmet leased the site from Cedar Lane Investments, which has owned the site since 1975. Prior to Calmet, a tire recapping business, H & H Tires, occupied the facility (MK, 1993; Calder, 1990; E&E, 11/90; USEPA, 3/91).

Tailings from the U.S. and Mexico were trucked to Calmet by numerous smelting and refining companies. Calmet used a cyanide leaching process to extract gold ore from the tailings. The tailings were placed on a tailings pad northwest of the main building and sprayed with cyanide. The resulting "pregnant" solution from the leaching of the tailings was gravity collected and pumped into the plant for treatment with a zinc-bearing solution and filtered. The spent tailings were washed with water, removed from the site and transported to the Little Pedro Mining Company facility located 10 miles south of Fountain at Midway, Colorado. Englehard Industries West, Inc. bought the gold and silver dore produced at the site. The dore was shipped to their refinery facilities in Anaheim, California (Almas, 1986; Calder, 1990; USEPA, 3/91).

In early 1986 Calmet converted the operation to a pressure leaching process. On November 15, 1988 Calmet filed for bankruptcy. As of December 1988, Calmet ceased to exist. The plant equipment was turned over to the Century Bank of Broadmoor-Skyway and put up for sale. From October, 1988 to March, 1989 Calmet employees dismantled and removed equipment and supplies from the site (E&E, 9/91; Calder, 1989).

On April 2, 1990 Chemical Sales leased the site for use as a warehouse. It was not staffed by any full time employees. It was used for product storage and from time to time as a distribution point to its customers. Chemical Sales supplied sodium cyanide to Calmet. Chemical Sales moved out of the site in January, 1993 (ICF, 1992; Parcel et al, 1991).

2.3 Calmet Process Description

The Calmet pressure leaching process used after early 1986 is illustrated in Figure 3. Concentrated ores were delivered by truck either in bulk or in drums. The concentrates were emptied into the storage bins at the northeast corner of the plant and then loaded into a feed hopper. A 0.5 to 1% solution of sodium cyanide was added to the concentrates to form a slurry, which was then pumped to a ball mill to grind concentrates into a fine ore. The slurry fines were sent to a holding tank for mixing with lime, caustic soda, additional cyanide solution and other additives, then sent to an autoclave for pressure and temperature processing. After $\frac{1}{2}$ to 1 hour in the autoclave, the slurry pulp was pumped into holding tanks where pregnant solutions (solutions that contain dissolved precious metals) were decanted off. The remaining pulp was then washed with a barren solution to dissolve any remaining precious metals. Pregnant solutions were clarified and deaerated under vacuum pressure prior to precipitation with zinc dust. The precipitants were filtered, hand mixed with fluxing agents, smelted in a furnace, and poured to form dore bars. The bars were shipped to the refinery where their value was determined. The pulp solids were then rinsed with fresh water, pressed and subjected to compressed air for drying. Spent tailings were then put on a conveyor belt and sent to the tailings pad on the northwest corner of the plant (Calder, 1990; CDH, 7/29/87).

Process solutions occasionally were discharged to the Fountain Sanitation District sewer after treatment. The solutions were treated by heat to destroy free cyanide and by adding zinc to cause the remaining gold, silver, copper and lead to precipitate out of solution before discharge. Calmet did not have a Public Operation Treatment Works (POTW)

permit with the District for this discharge. Cyanide solutions were stored in five 2,200-gallon tanks inside the plant within a concrete containment area (Almas, 1986; CDH, 8/24/87).

2.4 Site Drainage

In October, 1985 tailings piles at the facility were observed in direct contact with the ground surface. During heavy rains the tailings were washed into the drainage swale along the west border of the site. Tailings residue also was apparent in a ditch adjacent to the Denver and Rio Grange Western Railroad tracks west of the site (see Figure 4). In October, 1985 the Colorado Department of Health found Calmet in violation of Colorado solid waste disposal regulations for not containing the tailings within the facility boundary or controlling surface water runoff. Sometime during 1986 or 1987 the tailings pad at the site was flooded as a result of heavy rains and the collapse of a dammed pond upgradient of the site. Cyanide residue was carried away from the pad with surface water runoff resulting in soil contamination. On sunny days water from the solution tanks was sprayed onto the leach pad and allowed to evaporate (CDH, 10/85; CDH, 11/8/85; CDH, 11/25/85; Almas, 1986; USEPA, 3/91).

Slurry was discharged onto the west side of the roof from a corroded steel drain and a 500-gallon "horse" trough. Sodium cyanide in the discharged slurry accumulated on the roof and was washed down to the ground surface at downspout locations around the building by rainwater runoff. The contaminated rainwater then drained west across the parking lot. Some of this runoff entered an outside sump that subsequently pumped it onto the tailings pad. Water from the roof was pumped inside the plant into four 6,000-gallon solution tanks and used for process makeup water. (Calmet, 1987; Calder, 1990; USEPA, 3/91).

The area of the roof that was affected by the slurry discharge was cleaned by removing the gravel and concentrate solids. The entire roof was treated with sodium hypochlorite to destroy cyanide residues. The west side of the roof was then steam cleaned. The steel drain was replaced with a PVC drain. A new underground roof drainage system, consisting of a 6-inch diameter PVC pipe, was installed. This pipe conveys roof drainage

underneath the gravel area south of the tailings pad to the swale west of the plant. The southwest and southeast roof drains were then plugged. The top 6 to 12 inches of gravel in the parking lot west of the plant was removed and placed on the tailings pad (CDH, 7/29/87; Calmet, 1987)

2.5 Previous Soil Sampling and Soil Removal

In April, 1990 the USEPA Emergency Response Branch assigned Ecology & Environment, Inc. (E & E), the Technical Assistance Team (TAT) contractor, the task of collecting soil samples from the site to assess the degree of soil contamination present. Seven samples were collected. The concentrations of 17 metals were greater than three times the levels present in a background sample (E&E, 7/90; E&E, 1992; USEPA, 8/91b). The concentrations of antimony, barium, cadmium, cobalt, copper, lead, silver and cyanide detected were greater than soil action limits which are shown in Table 1.

From July into the fall of 1990, Cedar Lane Investments, the owner of the property, had the Little Pedro Mining Company (LPMC) of Colorado Springs remove contaminated soil from the site to a leach pad at LPMC's Wigwam Processing Plant in Midway, Colorado. A total of 922 tons of soil were removed during this period (LPMC, 1990; Jenkins, 1990).

On March 29, 1991 USEPA issued a Unilateral Administrative Order (UAO) to previous owners and operators of the site that required them to excavate contaminated soils at the site to a depth at which remaining soil achieved specified clean-up levels or to a maximum depth of 12 inches (Merrill, 1992; USEPA, 8/91b)

Cedar Lane Investments retained Stewart Environmental Consultants, Inc. (SEC), Fort Collins, Colorado to oversee the removal of additional soil and conduct additional soil sampling in accordance with the UAO. On April 8, 1991 SEC collected soil samples at the same locations sampled by TAT in April, 1990. The analytical results indicated that cleanup levels had not been achieved at two sample locations west of the main building - one inside the fence south of the tailings pad and one between the fence and the railroad tracks. One additional foot of soil was removed from these two locations, which amounted to 300 tons. Confirmation samples were collected on April 12, 1991 (Figure 4). The analytical results from these samples indicated that the cleanup levels for soil areas inside the fence had been achieved. Concentrations of arsenic, cadmium, cyanide, lead

and silver in excess of the cleanup levels were present, however, at sample location SEC15, which is between the fence and railroad tracks (see Table 1) (SEC, 1991).

On June 20, 1991 USEPA issued a notice of violation to Calmet for non-compliance with the UAO. The EPA Emergency Response Branch tasked TAT to collect confirmation samples. On July 16, 1991 TAT split samples with SEC. The analytical results from these samples contained metals concentrations below the cleanup level. Two of the three samples collected by TAT were from areas where soil removal did not occur. On August 21, 1991 USEPA notified the site owner that no further soil removal would be required (USEPA, 6/91; USEPA, 8/91a; E&E, 1991).

2.6 Geology and Hydrogeology

Calmet is located on the terrace of a Pleistocene alluvial aquifer. This aquifer consists of sand, gravel and minor quantities of silt and clay which are derived from granite, sandstone, limestone and shale of the nearby mountain and upland areas. The coarsest materials are cobble size and were deposited in the bottom of a buried channel that runs the length of the Fountain Creek valley. The alluvial channel is separated from the stream in many places by a shale ridge (USGS, 1984; USGS, 1986a).

The alluvial aquifer ranges in thickness from a few feet to approximately 100 feet. The depth to ground water ranges from a few feet in wells on the floodplain of Fountain Creek to 40 feet in wells on terraces above the creek. The ground water gradient generally is to the south, which is the flow direction of the creek. Localized and transient reversals of this direction may develop in areas of heavy pumpage. Water levels fluctuate greatly in areas of heavy seasonal pumpage. Wells typically yield 400 to 700 gallons per minute (USGS, 1984; USGS, 1986a).

The aquifer is recharged by infiltrating precipitation and seepage of water from irrigation and from Fountain Creek. The aquifer also discharges to the creek in Section 25 of T. 15 S., R. 66 W., which is 1 to 2 miles northwest of the site. The rate of ground water flow in this aquifer is 10 to 40 feet per day and averages 20 feet per day (USGS, 1984 and 1986a).

Hills adjacent to the valley are capped by mesa gravels which are poorly sorted and interbedded with numerous sandy layers. The average thickness of the mesa gravels is 10 feet with a maximum thickness of 75 feet. The gravels yield relatively small amounts of water. Springs are present where the mesa gravel is in contact with the underlying Pierre Shale Formation (USGS, 1984; USGS, 1986a).

The Pierre Shale Formation underlies the alluvial aquifer and contains abundant fossil ammonites, which are a large extinct group of mollusks. The fossil record has been used to stratigraphically zone the formation into seven units. Two of the seven Pierre Shale units which exist within 4 miles of the site are the "cone-in-cone zone of Lavington" and the "tepee zone of Gilbert" (USGS, 1986b).

The cone-in-cone zone of Lavington underlies portions of the 4 miles radius east of Fountain Creek. This zone is about 2,290 feet thick and consists of clayey and or silty shale containing siderite concretions, iron-stained limestone concretions, and bentonite beds (USGS, 1986b).

The tepee zone of Gilbert underlies portions of the 4 mile radius west of Fountain Creek. This zone is about 1,346 feet thick and is characterized by conspicuous cone-shaped hills called tepee buttes. This zone is composed of shale containing many ironstone concretions, rounded limestone concretions, and large irregular masses of porous limestone (tepee butte limestone). Much of the shale is silty, and some is micaceous, carbonaceous and bentonitic (USGS, 1986b).

A sandy transition zone occurs in the upper 400 to 600 feet of the Pierre Shale. This formation acts as an aquitard and does not generally yield water to wells, except in fine-grained clayey sandstone zones near the top of the formation and in zones of surficial weathering (USGS, 1986b).

3.0 NOVEMBER, 1993 SAMPLING

MK collected three onsite soil samples and one offsite, background soil sample on November 16, 1993. Aqueous samples were also collected from the northwest and northeast sumps at the site on this date. The onsite sample locations are shown in Figure 4. Figure 2 shows the location of the background soil sample. Analytical results for these samples are presented in Tables 2 and 3.

On November 2, 1993, MK collected ground water samples from five residential wells near the site and from Fountain City Well #4. The locations of the private wells are shown in Figure 2. The municipal well location is shown in Figure 1. Analytes that were detected at concentrations above Contract Required Detection Limits (CRDLs) in the samples are summarized in Table 4.

MK collected surface water and sediment samples from Fountain Creek and a wetland between the site and the creek on November 3, 1993. Analytical results for the surface water samples are shown in Table 5. The concentrations of inorganic analytes detected in sediment samples above the CRDLs are shown in Table 6.

4.0 DATA VALIDATION

Seven soil/sediment samples and fifteen water samples were analyzed under RAS CLP protocols for inorganic analytes, base-neutral acid extractable and volatile organic compounds. Analytical results were validated by the ESAT contractor, according to CLP Data Validation Functional Guidelines. The data sheets and data validation summaries are included in Appendix B. The quality assurance review indicated that the analytical data are acceptable with the qualifications noted below.

4.1 Inorganic Data

The cyanide concentrations detected in the onsite samples are considered estimates because required mid-range standards were not distilled and analyzed. The lead concentrations detected in the onsite samples and the zinc and copper concentrations detected in the soil samples, are considered to be estimates because laboratory duplicate results were outside established control limits.

Zinc concentrations in the sediment samples are considered estimates because serial dilutions were outside of established control limits. Arsenic and selenium concentrations detected in the sediment samples are considered estimates because matrix spike recoveries were below control limits. The selenium results for CA-SE-1 and CA-SE-2 were rejected by the data reviewer.

4.2 Organic Data

Incorrect surrogate spike levels in the original extractions associated with the ground water and surface water BNA sample fractions required re-extraction of these samples. The re-extractions were performed beyond holding times, which required that all detection limits be flagged as estimates. Bis (2-ethylhexyl) phthalate (BEHP) was the only organic compound detected in the original extractions and re-extractions. All BEHP values were adjusted to non-detects by the data reviewer because of its presence in laboratory blanks.

Methylene chloride concentrations in some of the ground water and surface water samples were adjusted to non-detected values because no spectra were provided for target compounds found in laboratory blanks.

5.0 WASTE CHARACTERISTICS

Analytical results from background and cleanup confirmation soil samples collected at the site by E & E and SEC in 1990 and 1991 indicate that soil is contaminated with arsenic, cadmium, iron, lead, nickel, silver and cyanide (Table 1). The concentrations of these analytes in the sample from SEC15 collected in April, 1991 were greater than the established cleanup criteria for each analyte (SEC, 1991; E&E, 1992; E&E 7/90).

Analytical results for soil samples collected at the site on April 8, 1991 by SEC and on July 16, 1991 by E & E indicate that there are two other areas of soil contamination at the site. Sample SEC8 was collected south of the storage bins on the east side of the site on April 8, 1991 (see Figure 4). The concentration of arsenic in this sample was greater than three times the level detected in background sample SEC7. Nickel, silver and cyanide were detected in E & E confirmation sample S-2, collected to the southwest of the west gate, at concentrations greater than the Contract Required Detection Limits (CDRLs) for each analyte. These analytes were not detected in the background sample S-7 collected by E & E on April 27, 1990. The analyte concentrations detected in S-2 and SEC8 were far below the established cleanup criteria (SEC, 1991; E&E, 1992; E&E, 7/90).

Cadmium, cyanide, mercury and silver were detected in samples CA-SO-2 and CA-SO-4, but not in background sample CA-SO-1 (see Figures 2 and 4, and Table 2). The concentrations of arsenic, copper, lead and zinc detected in these two samples were at least nine times levels found in CA-SO-1. Low levels of several volatile organic

compounds and one phthalate also were detected in the soil samples. Only 4-methyl-2-pentanone in CA-SO-2 was elevated relative to the background concentration. Soil samples document elevated metals in the northern portion of the site, but do not indicate widespread organic contamination in the soil.

Ten metals and cyanide were detected above CRDLs for each analyte in the samples from the northwest and northeast sumps at the site. The iron, aluminum, and sodium concentrations in these samples exceeded 1 part per million (ppm). The concentrations of the other inorganic analytes were less than 1 ppm. No organic compounds were detected in the sump samples.

6.0 SOIL EXPOSURE PATHWAY

Soil sampling data indicates that there are five areas of contamination at the site: in the northeast portion of the site at sample location CA-SO-4; northwest of the tailings pad at CA-SO-2; west of the main building at sample locations SEC12, SEC15, SEC16; in the southwest portion of the site at sample location S-2; and south of the storage bins in the eastern portion of the site at sample location SEC 8 (see Figure 4).

SEC samples 12, 15 and 16 were collected after the soil removal. The cyanide concentrations detected in these samples were greater than three times the background level. The area bounded by these samples is a triangle with approximately 36 foot x 11 foot dimensions. The area is located beyond the site fence and covers approximately 198 square feet. Soil at sample locations S-2, SEC8, CA-SO-2 and CA-SO-4 is contaminated relative to the background levels. Contaminant concentrations for these samples do not exceed the established cleanup criteria. Soil samples collected from areas adjacent to S-2 and SEC8 did not contain elevated contaminant concentrations.

A fence surrounds the main building. The two gates along the south fenceline are not secured. There are no persons living or attending school on the site. The Mesa Elementary School lies within the $\frac{1}{4}$ - $\frac{1}{2}$ mile distance category. The Fountain-Fort Carson High School lies in the $\frac{1}{2}$ - 1 distance category. The enrollment of these schools is 304 and 705 students, respectively (Smith, 1993; Soleau, 1993).

7.0 GROUND WATER MIGRATION PATHWAY

The City of Fountain obtains most of its drinking water from the Frye-Ark water system, which draws water from Pueblo Reservoir. The City of Fountain uses four supply wells in the alluvial aquifer on an as-needed basis during periods of high water demand. Fountain Well #4 is located approximately 0.6 miles south of the site. The other three Fountain wells are 1 to 1.2 miles south to south-southeast of the site (see Figure 1). The depths of these wells are 50 to 57 feet. The Fountain distribution system is divided into high and low zones. Each of these zones normally receives water from two of the supply wells. Flow between the zones is controlled by valves so that water can flow throughout the system. The service population for the Fountain water system is approximately 9,000 (Woolsey, 1993).

The Security Water District purchases 95% of its winter water needs from the Frye-Ark water system. This district also uses 23 supply wells that draw from the alluvial aquifer. These wells are used primarily in the summer on a rotation basis. Thirteen of the wells are located beyond 4 miles of the site. Security well S-10 is located approximately 2.9 miles northwest of the site. Nine Security wells are located between 3 to 4 miles northwest of the site (see Figure 1). Water from each of the supply wells is blended in the distribution system. The service population of the district is 15,000 (Hyre, 1993; Schrader, 1993).

The Widefield Homes Water Company (WHWC) purchases 51% of its water from the Frye-Ark water system. WHWC augments Frye-Ark water with 15 supply wells, 13 of which are within the 4 mile target distance limit. All of these wells draw from the alluvial aquifer. During the winter only one or two of the wells may be in use. All of these wells are used in the summer. WHWC well E-2, which is used only during the summer, is located 1.9 miles northwest of the site. Four "C" wells and four "W" wells are scattered between 2.2 and 2.8 miles northwest of the site. The "C" wells are used only in the summer. The "W" wells are used throughout the year. Two "JHW" and two "PVW" wells are located approximately 3.5 miles northeast of the site close to Jimmy Camp Creek, which is a tributary of the Fountain Creek alluvial aquifer (see Figure 1). These wells are used throughout the year. The WHWC's service population is approximately 20,000 (Snoddy, 1993).

According to the Colorado Department of Natural Resources, Division of Water Rights (CDWR) there are 427 private wells located within 4 miles of the site. Drinking water use is indicated for 248 of the private wells. The rest of the private wells are used for irrigation, stockwatering and other purposes. The number of private potable wells within each target distance category is given below:

0 to ½ Mile:	18
½ to 1 Mile:	33
1 to 2 Miles:	71
2 to 3 Miles:	68
3 to 4 Miles:	58

The depths of the potable wells ranged from 16 to 125 feet. The DWR records do not indicate which aquifers are utilized by the private wells (CDWR, 1991).

Six private wells near the site were sampled by the Colorado Department of Health (CDH) in 1987 and 1988 (Figure 2). Analytical results for these samples are shown in Table 3. Cyanide was detected in samples from the Marshall Welding Shop well collected on two separate dates, and in samples from the residential wells at 9240 Highway 85-87 and 1005 Santa Fe Avenue (CDH, 1988; CDH, 7/20/87).

The iron concentrations detected in the welding shop well samples (CA-GW-2 and CA-GW-3) collected by MK on November 2, 1993 were greater than three times the level in the background well at 1718 Rustique Drive (CA-GW-1) (see Figure 2 and Table 4). No volatile organic (VOC) or base-neutral acid extractable (BNA) compounds were detected in samples from any of the residential wells near the site. The concentrations of copper, magnesium, selenium, sodium and zinc in the residential well samples were not elevated relative to the background well. Other target analyte list metals were either not detected in the samples or detected at concentrations below the contract required detection limit (CDRLs).

8.0 SURFACE WATER MIGRATION PATHWAY

8.1 Overland Flow/Flood Migration

Soil deposited at the site is classified as a Schamber-Razor soil complex. Schamber soil is formed in eolian material mixed with alluvium and colluvium derived from granite. Schamber soil is well drained and rapidly permeable. The top 14 inches is typically gravelly loam. The loam overlies a gravelly sand that extends to a depth of 60 inches or more. Razor soil is formed in residuum derived from calcareous shale. This soil typically has 18 inches of clay loam that grades to shale at a depth of about 31 inches. This soil is well drained and has a low permeability (USDA, 1981).

The site lies above the Fountain Creek floodplain. Runoff from the site enters a shallow drainage between the site and the Denver and Rio Grande Western Railroad (DRG) tracks. There is another drainage along the railroad tracks that is separated from the shallow drainage by an earthen berm (see Figure 4). The shallow drainage continues south-southeast from the site for 375 to 400 feet where it goes through a culvert underneath the DRG tracks (Figure 2). The drainage then continues south-southeastward approximately 450 feet before passing through a second culvert beneath the Atchison, Topeka and Santa Fe Railroad tracks. The drainage continues in a west-southwest direction, enters a culvert beneath Santa Fe Avenue (Highway 85 and 87) and empties into the Chilcotte Irrigation Ditch about ¼ mile from the site (FEMA, 1993; MK, 1993).

The headgate to the Chilcotte Ditch is typically opened from April through October allowing water from Fountain Creek to enter. The ditch usually is dry after the irrigation season. This ditch flows southeast for 7.2 miles to Calhan Reservoir (Figure 5). The reservoir is 0.3 mile long and has two intermittent streams leading from its dam to the south. The eastern outflow stream ends without connecting to another body of water. The western outflow channel continues for 2.85 miles to the south where it flows into Irrigation Ditch #14. This ditch, which is also has an intermittent flow, continues southeast for ¾ of a mile where it seeps into the ground. The endpoint of this ditch is about 11.4 miles downstream from the site (Ermel, 1993; Hannah, 1993; USGS, 1961).

A National Wetland Inventory map of the Buttes 7.5-foot quadrangle indicates that the lower 1.94 miles of the Calhan Reservoir outflow channel flows through palustrine wetlands (U.S. Fish & Wildlife Service, 1974-1975). Catfish and carp are present in the reservoir (Ermel, 1993).

On July 14, 1987 Colorado Department of Health (CDH) collected five sediment samples from the drainage path for cyanide analysis. The sample locations and results are indicated in Figures 2 and 4. Cyanide concentrations detected in three of the samples were at least three times greater than the 50 ppm cleanup standard for cyanide. Two of these three samples were collected in the ditch west of the plant. The sample with the highest cyanide concentration (530 ppm) was collected where the ditch enters the culvert underneath the Denver & Rio Grande Western Railroad tracks south of the site (CDH, 7/29/87).

In April, 1990 E & E collected three samples from the drainage path at the site. The analytical results from these samples indicated that the drainage was contaminated with heavy metals. Soil was excavated from a portion of the drainage path that included the E & E sample locations (Figure 4). After the soil removal Stewart Environmental Consultants (SEC) collected four cleanup confirmation samples from the drainage path. Table 1 shows analytical results for soil samples collected at the site by E & E and SEC. SEC sample #15 contained concentrations of arsenic, cadmium, lead, silver and cyanide in excess of the cleanup standards established for each of these analytes. Cyanide was detected in samples SEC12 and SEC16, but was not detected in upgradient sample #1 collected by CDH (Figure 1) (SEC, 1991; CDH, 7/20/87; E&E, 7/19/90).

8.2 Ground Water to Surface Water Migration

Fountain Creek is located approximately 0.4 mile west of the site. Chilcotte Ditch lies between the site and Fountain Creek, but probably is not an aquifer discontinuity because of its shallow depth and the 40-foot drop in elevation between the ditch and the creek. Fountain Creek is fished; however, no fish population studies are known to have been conducted (ICF, 1992; USGS, 1961).

Bishop, Brogden & Associates (BBA), a consulting firm in Lakewood, Colorado conducted a hydrologic survey of the Fountain Creek Regional Park for the El Paso County Parks Department. ERO Resources Corporation of Denver produced a hydrologic map of the

park. Ground water elevations relative to Fountain Creek west of Highway 85 and 87 are included in this map, as well as wetland areas throughout the park (Figure 6). The Fountain Methodist Church and welding shop wells are located close to the 20-foot contour. Data for these two wells indicate there is an 18-foot high water column. The lowest portion of the water columns in these wells is very close to the elevation of Fountain Creek and Cottonwood Meadows Pond. These data are a strong indication of a ground water to surface water connection.

Surface water and sediment samples (CA-SW-2/CA-SE-2) were collected in an outflow channel located at the southwestern edge of a wetland that surrounds the Cottonwood Meadows pond. This pond lies in the southern portion of Fountain Creek Regional Park east of the creek. Upstream sediment and surface water samples (CA-SE-1/CA-SW-1) were collected in Fountain Creek due west of the site in the area shown in Figure 2. Downstream sediment and surface water samples (CA-SE-3/CA-SW-3) were collected in the creek at a point roughly 60 feet downstream from the southern edge of a rip-rapped channel. The rip-rapped channel is located in Hanson Park, a Fountain city park adjacent to the south edge of Fountain Creek Regional Park.

None of the 13 inorganic analytes detected in CA-SW-2 or CA-SW-3 were elevated relative to upstream sample CA-SW-1. The concentrations of aluminum, arsenic, barium, chromium, copper, iron, magnesium, vanadium and zinc detected in CA-SE-2 were greater than three times the levels found in CA-SE-1. Acetone was detected in all of the surface water samples and sediment sample CA-SE-2. The acetone concentrations detected in the surface water samples were less than the Contract Required Quantitation Limit (CRQL). No other VOC or BNA compounds were detected in the surface water samples or detected above the CRDLs in the sediment samples. Chlorobenzene, flouranthene and pyrene were detected below the CRDLs in the sediment samples.

9.0 SUMMARY

Calmet of Colorado, operated an ore processing plant at the site from 1983 to 1988. In 1990 and 1991 contaminated soil was removed from the site and transported to the LPMC Wigwam Processing Plant in Midway, Colorado.

Waste sources at the site include five small scattered areas of soil contamination with elevated arsenic, cadmium, copper, cyanide, lead, mercury, silver and zinc concentrations.

There were no inorganic analytes, except iron, nor volatile organic (VOC) or base-neutral/acid extractable (BNA) compounds detected at elevated concentrations in the November, 1993 ground water samples collected from nearby residential wells. Twenty-seven municipal wells and 248 private drinking water wells are located within four miles of the site. All of the municipal wells are screened in the alluvial aquifer.

Elevated cyanide concentrations were detected in samples collected in a ditch adjacent to the site that empties into the Chilcotte Ditch. A sample collected from this ditch in April, 1991 contained arsenic, cadmium, lead, silver and cyanide concentrations greater than the cleanup standard for each of these analytes. The only targets known to be associated with this flow path are wetlands at the Calhan Reservoir, approximately 7.5 miles downstream.

Elevated concentrations of aluminum, barium, chromium, copper, iron, magnesium, vanadium and zinc were detected in a wetland outflow sediment sample near the site in November, 1993. Except for iron, these metals were not found at elevated levels in the residential well samples. Fountain Creek is a fishery and supports several miles of wetlands.

The site is fenced but not locked, and contaminated sediments may remain in the drainage ditch beyond the property boundary. Approximately 3,300 people reside within one mile and 25,400 people reside within four miles of the site.

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TABLE 1

Analytical Results for Selected Soil Samples
Collected At Calmet, Fountain, Colorado

(Results in mg/kg)

Sample ID	S-2	SEC8	SEC12*	SEC15*	SEC16*	S-7	SEC7	Cleanup Standard
Location	South of Pad	Storage Bins	In Soil Removal Area Along Drainage Path			Background		
Sample Date	July 16, 1991	April 8, 1991	April 12, 1991			April 27, 1990	April 8, 1991	
Arsenic	18.3	23.5	4.12	542.7	6.74	8 U	7.2	200
Cadmium	1.2	5 U	5 U	42.5	5 U	0.8 U	5 U	35
Iron	NA	10,000	7,080	42,000	11,400	7,690	9,700	--
Lead	NA	25	25 U	7,800	25 U	127	25 U	500
Nickel	6.5	NA	NA	NA	NA	5.4 U	NA	--
Silver	3.7	5 U	5 U	43.8	5 U	0.66 B	5 U	20
Cyanide	7.2	0.86	1.4	400	1.54	1.0 U	0.33	50

- * = Cleanup confirmation sample
 U = Analyte was not detected. The number shown is the detection limit.
 B = Analyte was found in blank.
 NA = Not Analyzed for parameter.
 S = Collected by E&E, TAT.
 SEC = Collected by Stewart Environmental Consultants, Inc.
 [Shaded Box] = Concentration is at least three times greater than background sample level or is greater than the sample quantitation limit if not detected in the background sample.

(Source: SEC, 1991; E&E, 4/28/92; E&E, 7/19/90).

TABLE 2
Analytical Results for Soil Samples
Collected on November 16, 1993

Station ID CLP Sample No. (a) Location	CA-SO-1 MHBM14 Background	CA-SO-2 MHBM15 NW of Pad	CA-SO-3 MHBM16 West of Bldg.	CA-SO-4 MHBM17 NE of NE Sump
Arsenic	2.7	31.5	4.3	53.5
Cadmium	1.0 U	1.1	1.1 U	2.0
Copper (e)	4.2 J ^c	40.6 J	6.0 J	62.1 J
Lead	6.8	214 J (e)	8.6	317 J (e)
Magnesium	492 J ^c	755 J ^c	1570	952 J ^c
Mercury	0.11 U	2.7	0.11 U	0.47
Silver	1.1 U	3.3	1.1	8.7
Zinc (d)	20.5	247	36.1 J	382 J
Cyanide (c)	0.53 UJ	4.4 J	0.55 UJ	1.3 J
CLP Sample No. (b)	HP077	HP078	HP080	HP168
2-Butanone	51	110	16	30
4-Methyl-2-pentanone	3 J ^c	20	11 U	11 U
Trichloroethene	11 U	1 J ^c	11 U	2 J ^c
Toluene	2 J ^c	4 J ^c	11 U	6 J ^c
Xylene	11 U	2 J ^c	11 U	11 U
Dimethylphthalate	56 J ^c	25 J ^c	38 J ^c	73 J ^c

(a) = Results in mg/kg

(b) = Results in μ g/kg

J^c = Detected concentration is less than the Contract Required Quantitation/Detection Limit

U = Not detected at the reported concentration

J = The associated numerical value is an estimated quantity because the quality control criteria were not met

(c) = Data qualified because mid-range standard was not distilled and analyzed

(d) = Data qualified because the relative percent difference control limits for duplicate analyses was exceeded and serial dilution percent differences were outside control limits

(e) = Data qualified because duplicate results were outside of control limits

■ = Concentration is at least three times greater than background sample level or is greater than the sample quantitation limit if not detected in the background sample.

TABLE 3
Analytical Results for Sump Samples
Collected at Calmet on November 16, 1993
(Results in $\mu\text{g/l}$)

Station ID CLP Sample No. Location	CA-SU-1 MHBM18 NW Sump	CA-SU-2 MHBC90 NE Sump	CA-SU-3 MHBC91 DUP of SU-2
Aluminum	183 J ^c	1910	1930
Arsenic	38.8	53.0	60.0
Copper	94.3	135	131
Iron	208	2,310	2,230
Lead (c)	19.3 J	174 J	133 J
Manganese (b)	12.1 UJ	81.1	72.5
Mercury	0.2 U	0.59	0.59
Silver	16.4	30.3	27.8
Sodium	14,700	83,200	81,500
Zinc	135	312	299
Cyanide (a)	140 J	51.7 J	52.6 J

J^c = Detected concentration is less than Contract Required Detection Limit (CRDL)

U = Not detected at the reported concentration

J = The associated numerical value is an estimated quantity because the quality control criteria were not met

(a) = Data qualified because mid-range standard was not distilled and analyzed

(b) = Data qualified because of contamination in continuing calibration blank

(c) = Data qualified because spike recoveries and duplicate results were outside of control limits

Note: Barium, magnesium, vanadium, dimethylphthalate and isophorone were detected at concentrations below the CDRL for these analytes. Antimony, beryllium, cadmium, chromium, cobalt, nickel, selenium, thallium, VOC and other BNA compounds were not detected in these samples.

TABLE 4
Analytical Results for Offsite Residential Well
Samples Collected on November 2, 1993
(Results in $\mu\text{g/l}$)

Station ID CLP Sample No. Location	CA-GW-1 MHBM02 Background	CA-GW-2 MHBM03 Welding Shop	CA-GW-3 MHBM04 DUP of GW-2	CA-GW-4 MHBM05 9240 HWY 85-87	CA-GW-5 MHBM06 1005 Santa Fe	CA-GW-6 MHBM07 Rinse Blank	CA-GW-7 MHBM08 1201 El Paso	CA-GW-8 MHBM09 City Well #4	Drinking Water Standard (*)
Copper	230	30.3	41.9	1.5 U	46.2	1.5 U	40.5	1.5 U	1,300/ 1,000 (S)
Iron	33.7 J ^c	123	120	59.9 J ^c	18.5 J ^c	9.6 U	52.9 J ^c	26.4	300 (S)
Magnesium	50,600	46,400	45,600	45,000	48,200	34.3 U	45,400	30,900	None
Selenium	26.2	27.6	39.4	40.5	36.2	0.7 U	24.8	4.9 J ^c	50
Sodium	126,000	106,000	105,000	110,000	111,000	25.9 J ^c	125,000	99,700	20,000 (D)
Zinc	32.0	7.4 J ^c	7.1 J ^c	40.2	19.4	4.5 J ^c	93.7	5.2 J ^c	5,000 (S)/ 300 (R)

U = Not detected at the reported concentration

J^c = Detected concentration is less than the Contract Required Detection Limit (CRDL)

(*) = Drinking Water Standards:

(M) = Safe Drinking Water Act (SDWA) Maximum Contaminant Level (MCL)

(S) = SDWA- secondary MCL

(D) = Drinking Water Equivalent Level. A lifetime exposure concentration that is protective of adverse, non-cancer health effects

(R) = Reference Dose for 70 kg adult in $\mu\text{g/kg/day}$

■ = Concentration is greater than three times the background level or is greater than the sample quantitation limit if not detected in the background sample.

Note: No volatile organic or base-neutral acid extractable compounds were detected in these samples. Cyanide and the following metals were not detected in these samples: beryllium, cadmium, cobalt, mercury, nickel, silver, thallium, and vanadium. Aluminum, arsenic, barium, chromium, lead, manganese, and potassium were detected at concentrations below CRDLs in the samples.

TABLE 5
Analytical Results for Surface Water Samples
Collected Near Calmet on November 3, 1993
(Results in $\mu\text{g/l}$)

Station ID CLP Sample No Location	CA-SW-1 MHBM19 Fountain Creek Upstream	CA-SW-2 MHBM20 Wetland Outflow	CA-SW-3 MHBM21 Fountain Cr. Downstream
Aluminum	2,280	1,310	3,010
Arsenic	2.3 J ^c	1.0 U	2.6 J ^c
Barium	58.0 J ^c	62.8 J ^c	63.1 J ^c
Chromium	5.3 J ^c	4.7 U	6.0 J ^c
Copper	9.4 UJ(a)	1.5 U	10.9 J ^c
Iron	3,680	1,620	4,190
Lead	5.4	3.6	5.8
Magnesium	20,800	27,600	20,400
Manganese	187	54.3	188
Selenium	4.6 J ^c	8.0	4.8 J ^c
Sodium	81,500	90,400	78,700
Vanadium	7.3 J ^c	2.9 J ^c	8.7 J ^c
Zinc	50.5	12.3 J ^c	54.3
CLP Sample No:	HP170	HP171	HP172
Acetone (b)	6 J ^c	3 J ^c	4 J ^c

J^c = Detected concentration is less than Contract Required Detection Limit.

U = Not detected at the Reported Concentration.

J = The associated numerical value is an estimated quantity because the quality control criteria were not met.

(a) = Data qualified because copper was detected in the preparation blank at 2.2 $\mu\text{g/l}$.

(b) = Data qualified because the relative standard deviation on initial calibration exceeded control limits. No other VOC or BNAs were detected in these samples.

Note: Antimony, beryllium, cadmium, cobalt, mercury, nickel, silver, thallium, and cyanide were not detected in any of these samples.

TABLE 6
Analytical Results for Sediment Samples
Collected Near Calmet on November 3, 1993

Station ID CLP Sample No. (a) Location	CA-SE-1 MHBM22 Fountain Cr. Upstream	CA-SE-2 MHBM23 Wetland Outflow	CA-SE-3 MHBM24 Fountain Cr. Downstream
Aluminum	1,280	23,900	2,000
Arsenic (c)	1.2 J ^c	6.3 J	1.0 J ^c
Barium	32.6 J ^c	143	28.1 J ^c
Chromium	3.7	17.4	2.9
Copper	2.6 J ^c	17.0	2.5 J ^c
Iron	5,480	19,000	5,370
Magnesium	292 J ^c	4,820	594 J ^c
Selenium (c)	0.15 UR	6.1 J	0.16 UR
Vanadium	9.6 J ^c	42.6	9.8
Zinc (d)	14.5 J	91.7 J	18.0 J
CLP Sample No. (b)	HP173	HP174	HP175
Acetone	11 U	37	11 U
Methylene Chloride	12	33	14

(a) = Results in mg/kg

(b) = Results in μ g/kg

J^c = Detected concentration is less than CDRL.

J = The associated numerical value is an estimated quantity because the quality control criteria were not met.

R = Reported value is rejected.

U = Not detected at the Reported Concentration.

(c) = Data qualified because matrix spike recoveries were below control limits.

(d) = Data qualified because serial dilution was outside of control limits.

■ = Concentration is greater than three times the upstream level or greater than the sample quantitation limit if not detected in the background sample.

Note: Beryllium, cobalt, nickel, sodium, chlorobenzene, fluoranthene, and pyrene were detected at concentrations less than the Contract Required Detection Limit (CDRL) in the samples. Antimony, cadmium, mercury, silver, thallium, cyanide, and other VOC and BNA compounds were not detected in these samples.

TABLE 7

Cyanide Results for Private Well Samples Collected Near Calmet

(Results in mg/l)

Well Location	SAMPLE DATE		
	July 21, 1987 ^b	January 14, 1988 ^b	October 17, 1988 ^a
Marshall Welding Shop*	0.038	< 0.01	0.021
9240 Hwy 85-87	0.026	< 0.01	< 0.005
1005 Santa Fe Avenue	NS	< 0.01	0.051
Fountain Methodist Church	NS	< 0.01	< 0.005
1201 N. El Paso Street	NS	< 0.01	< 0.005
1718 Rustique Drive(✓)	NS	< 0.01	< 0.005

NS No Sample Collected

* A sample for metals analysis was also collected on October 26, 1987 and analyzed by CDH.

^a Analyzed by Accu-Labs Research, Inc., Wheat Ridge, Colorado.^b Analyzed by Colorado Department of Health.

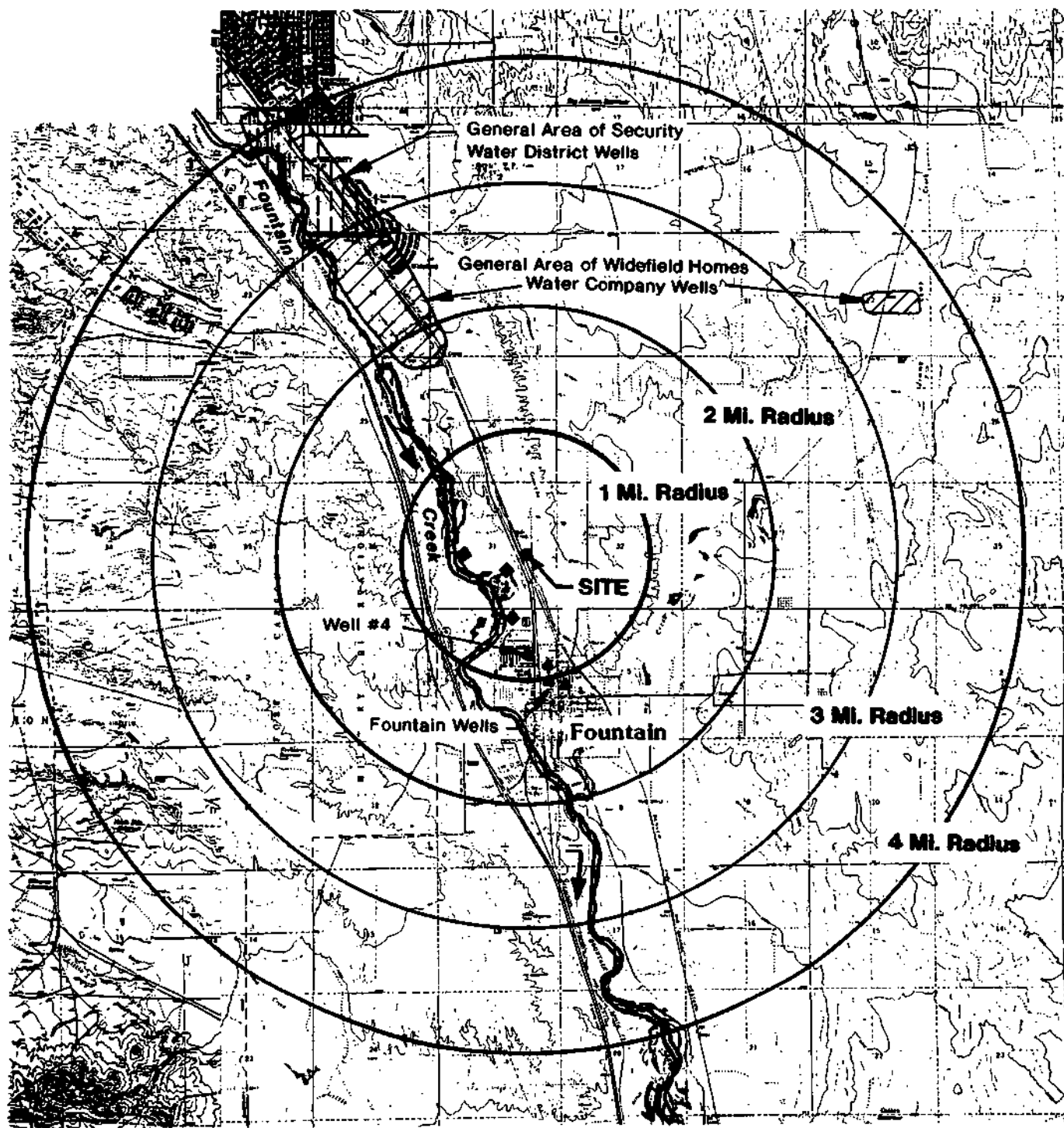
(✓) Potential upgradient or background well.

(Source: CDH, 4/14/88; CDH,7/20/87; Accu-Labs, 1988)

APPENDIX A
SAMPLING ACTIVITIES REPORT

APPENDIX B

DATA VALIDATION REPORTS AND LABORATORY DATA SHEETS

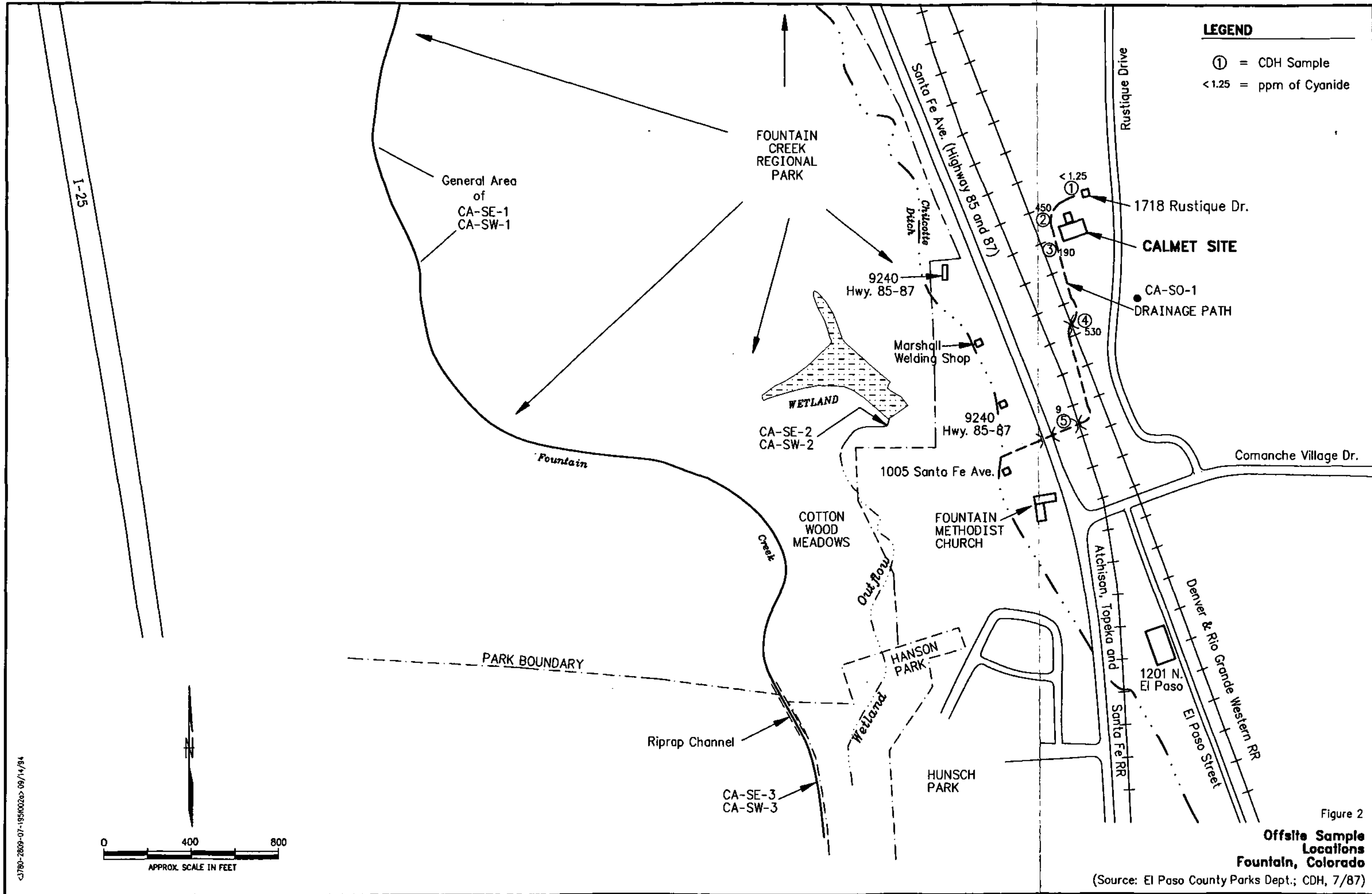


Map Location

Source: USGS 7.5' Quad. Map of Fountain, Cheyenne Mountain & Elsmere, Colorado

Figure 1

4-Mile Radius Map
CALMET
Fountain, Colorado



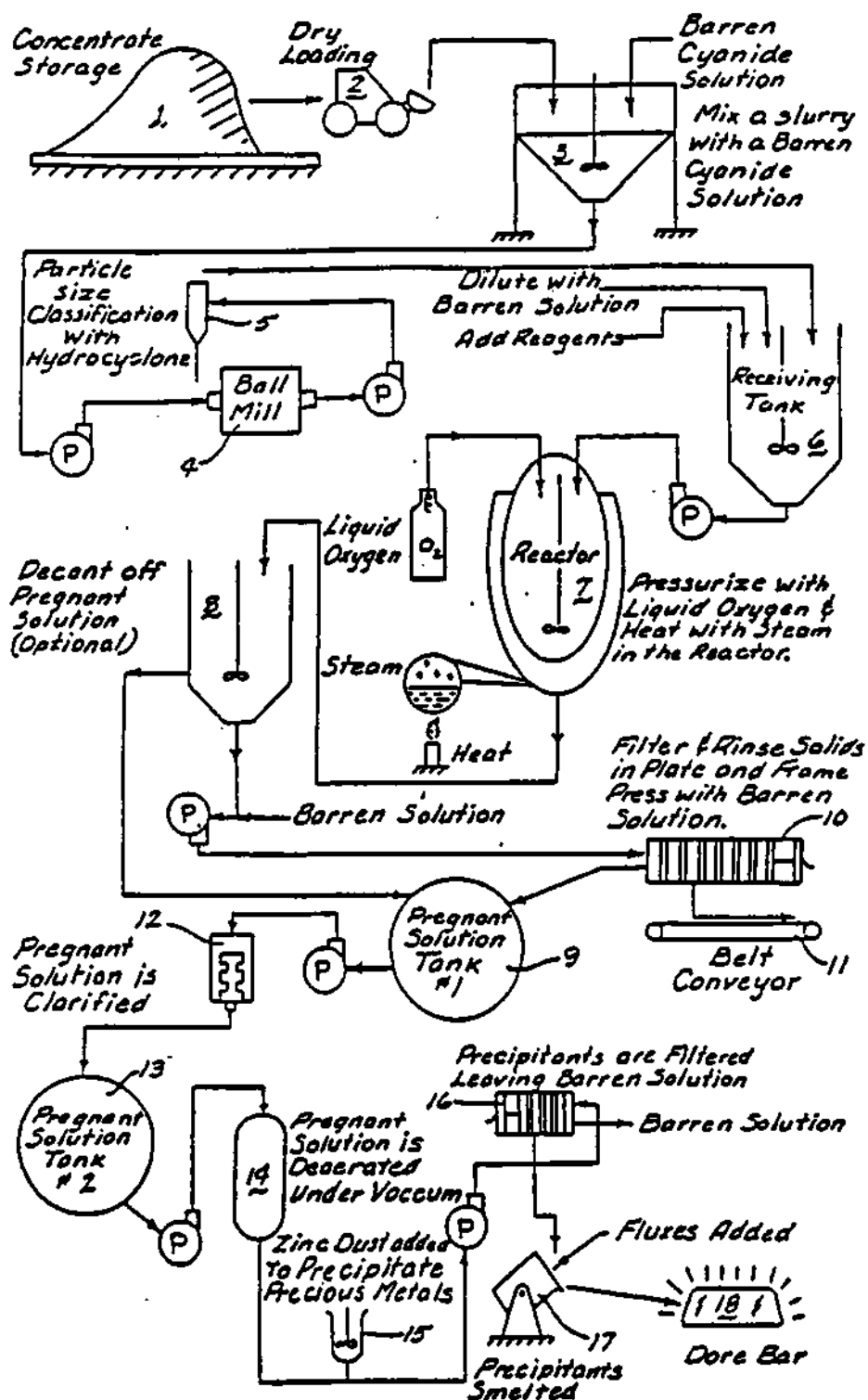
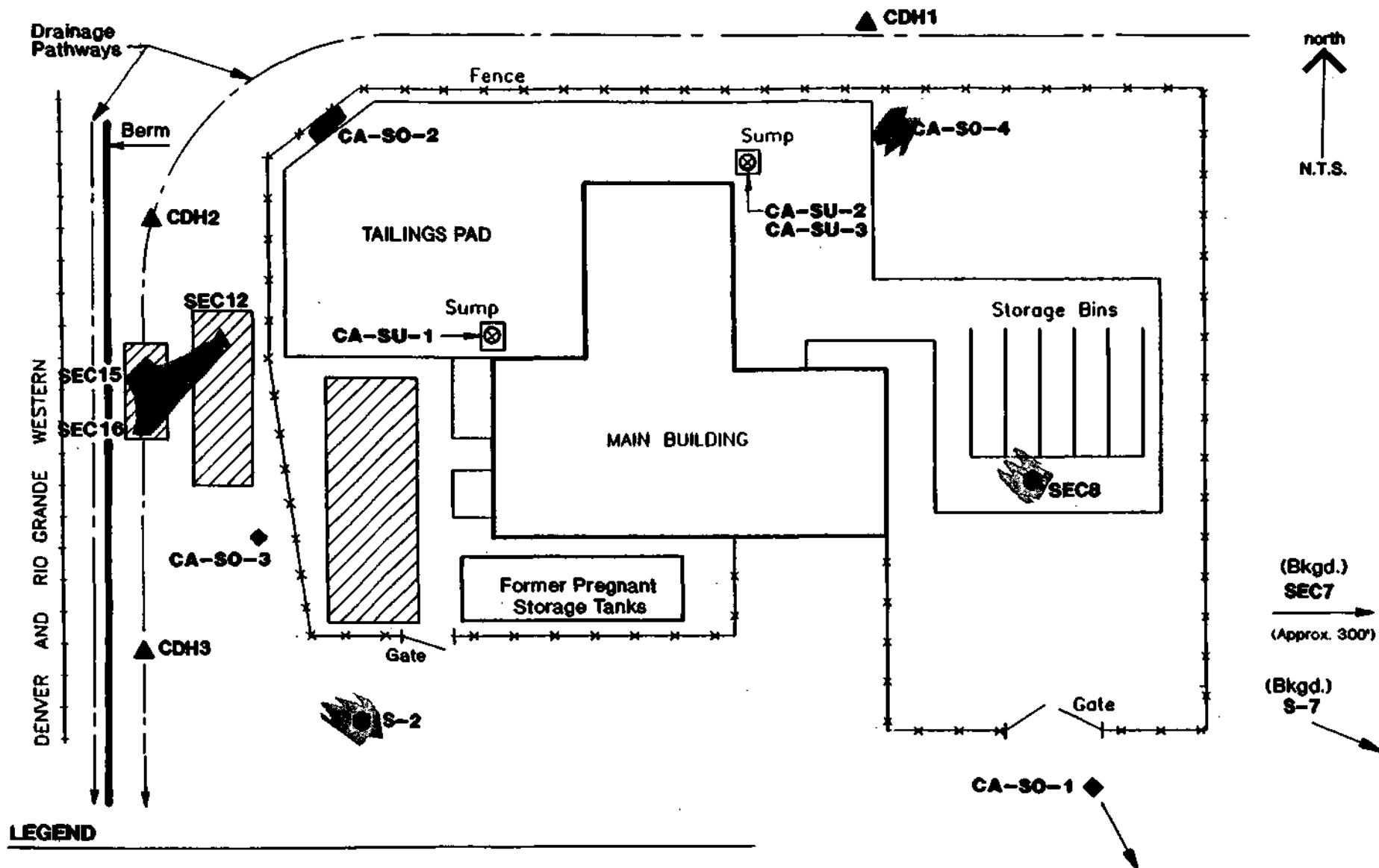


Figure 3

Process Flow Diagram
CALMET
 Fountain, Colorado

Source: CDH, 7/29/87



LEGEND

- | | | | |
|-------|---|---|--|
| ● S-2 | E & E Soil Sample | ⊗ | MK Sump Sample |
| ▲ | Drainage Pathway Sample | ◆ | MK Soil Sample |
| CDH | Colorado Dept. of Health Sample | ☼ | Location of Remaining Soil Contamination |
| SEC | Stewart Environmental Consultants Sample | | |
| ▨ | Approx. Areas of Soil Excavation in April, 1991 | | |

Figure 4

Onsite Sample Locations
Calmet
 Fountain, Colorado

Sources: SEC, 1991; E & E, 4/92 and 7/90; CDH, 7/20/87

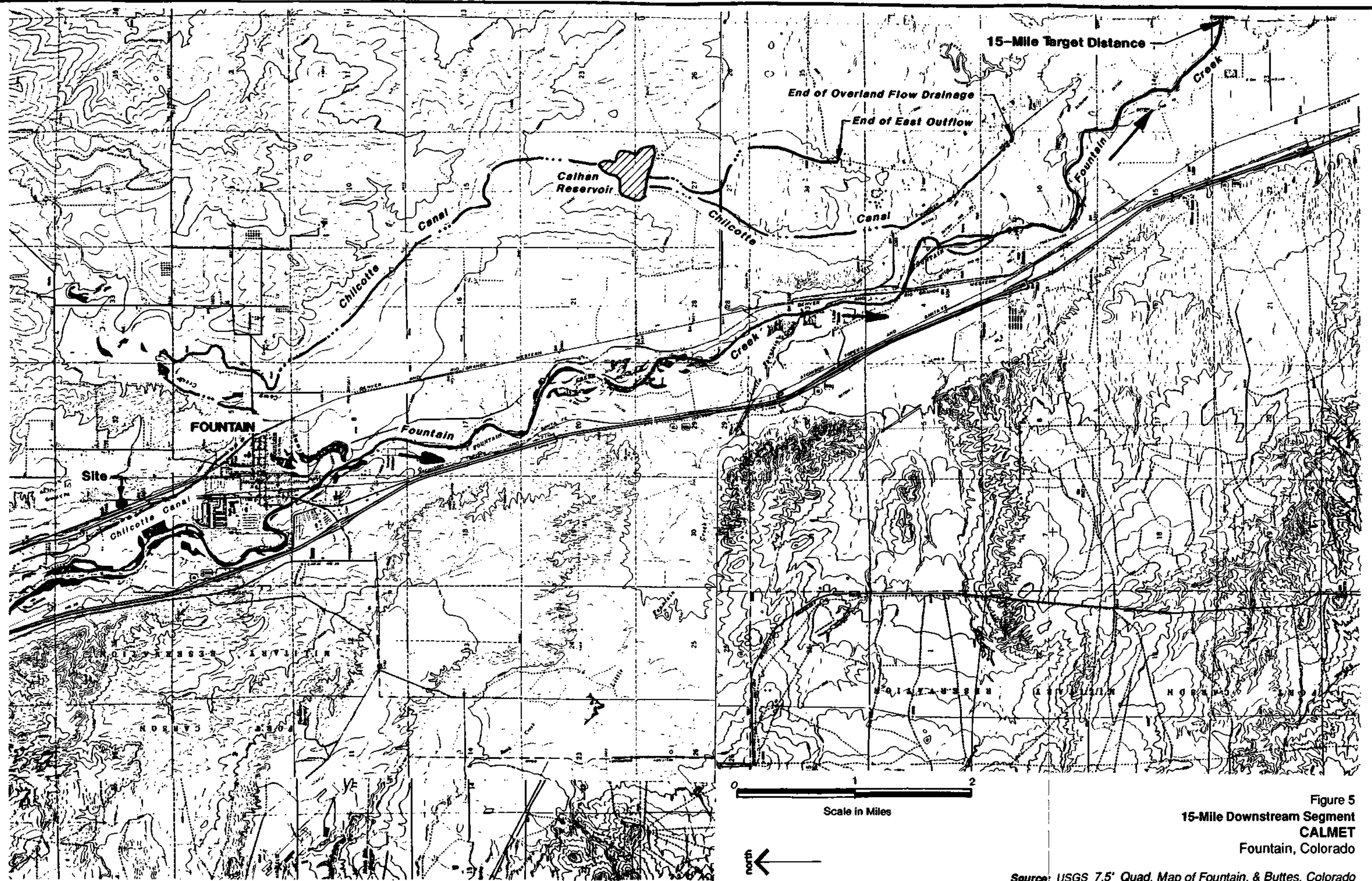
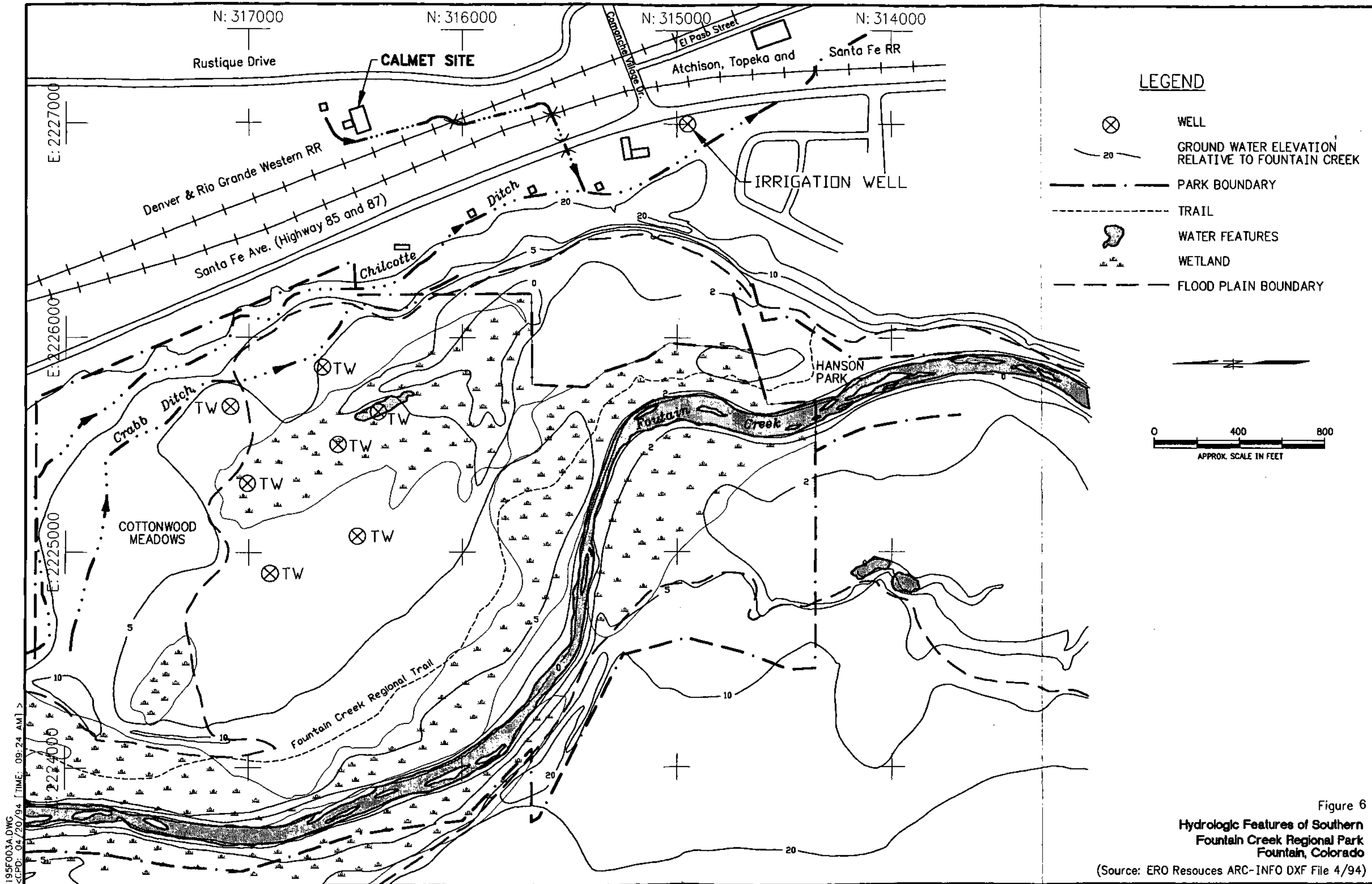


Figure 5
15-Mile Downstream Segment
CALMET
Fountain, Colorado

Source: USGS 7.5' Quad. Map of Fountain, & Buttes, Colorado



APPENDIX A
SAMPLING ACTIVITIES REPORT



MORRISON KNUDSEN CORPORATION

7100 E. BELLEVIEW AVENUE, SUITE 300
ENGLEWOOD, COLORADO U.S.A. 80111
PHONE: (303) 793-5000/FAX: (303) 290-0238

December 14, 1993

Pat Smith
Site Assessment Manager
USEPA, 8HWM-SM
999 18th Street, Suite 500
Denver, CO 80202-2405

Reference: ARCS Contract No. 68-W9-0025
WA# 28-8JZZ

Subject: Calmet SAR, CERCLIS ID COD983767443

Dear Pat:

Enclosed is the Sampling Activities Report for the Calmet site in Fountain, Colorado.
MK has no concerns related to the site at this time.

Sincerely,

APPROVED:

Mark Lunsford
MK Task Lead

Marta Green
ARCS Pre-Remedial Manager

Enclosure

cc R.E. Heise w/enclosures

SAMPLING ACTIVITIES REPORT FOR CALMET

1.0 INTRODUCTION

This Sampling Activities Report (SAR) is prepared in partial fulfillment of Work Assignment Number 28-BJZZ issued to Morrison Knudsen Corporation, Environmental Services Division (MK) by the Region VIII office of the U.S. Environmental Protection Agency (EPA) under ARCS Contract Number 68-W9-0025. The subject of this SAR is the Calmet site in Fountain, Colorado (EPA ID# COD983767443). A Sampling and Analysis Plan (SAP) was prepared and approved by EPA on August 12, 1993. The SAP serves as a guide for fieldwork associated with the Screening Site Inspection. The SAR discusses compliance with and deviations from the SAP and other field observations.

2.0 BACKGROUND

The Calmet site is located at 1710 Rustique Drive in Fountain, Colorado on 1.3 acres of land. The site lies in the NW1/4, SE1/4 of Section 31, T. 15 S., R 65 W. in El Paso County. The site is bordered by residential areas to the north and east, railroad right-of-ways to the west and vacant land to the south, and is currently owned by Cedar Lane Investments. A preliminary pathway analysis was presented in the SAP.

3.0 OFFSITE SAMPLING

3.1 Ground Water Sampling

Offsite ground water samples were collected on November 2, 1993. MK was accompanied by Ron Woolsey, Water Superintendent for the City of Fountain, during the ground water sampling.

Fountain City Well #4, located on the northwest corner of Linda Vista and Dale Street in Fountain, is normally used during peak demand periods in the warmer months of the year. The location of this well is shown in Figure 1. This well was run for approximately 3 hours and 25 minutes at a rate of 350 gallons per minute before sample CA-GW-8 was collected (see Appendix A, photo # 1). Water from the well is normally chlorinated as it comes out of the wellhead. The chlorinator was not turned on during the purging and

sampling period. The sample was obtained from a bypass port of the wellhead the extends through the lower wall of the wellhouse.

Ground water samples were collected at all locations specified in the SAP, except for the well at the Fountain Methodist Church on Santa Fe Avenue south of the site (see Figure 2). This well is used for lawn watering during the warmer months, but not for drinking. The wellhead is located beneath a manhole southwest of the church building. MK was informed that the well water in the pipes and sprinkler heads was removed to prevent them from freezing during the winter. The sample from the church well was to be designated CA-GW-6. The rinsate blank was designated CA-GW-6, instead of the CA-GW-9 as specified in the SAP, to maintain consecutive numbering of the samples.

The Marshall Welding Shop and the Lengacher residence, located at 9060 Highway 85-87, obtain drinking water from a well located south of the welding shop. The wellhead, which lies in the basement of a wellhouse, is not protected by a cover. A submersible pump is held in the well by a rope tied to the floorboard above it (see Photos 2-4). Sample CA-GW-2 and CA-GW-3 (a duplicate) were collected from the kitchen tap in the residence (see Photo #5). Faucets in the welding shop were not sampled because of obvious solvent odors.

A well at 1201 N. El Paso Street, located south of the site, supplies drinking water to a trailer owned by Elmer and Velma Crouse of 547 Rosemont Drive in Security, Colorado. The trailer is not used as a residence, but the well water is used for drinking. Sample CA-GW-7 was collected from an interior faucet in the trailer (see Photos 6 and 7).

Sample CA-GW-1 was collected from a well at 1718 Rustique Drive. This residence is occupied by William Warnecke. The well and wellhead are located in the lawn south of the house. The hand-dug well has a wooden cover over it. The wellhead has a hand pump attached to it (see Photos 7 and 8). Sample CA-GW-5 was collected from the Hanson residential well at 1005 Santa Fe Avenue. The samples from these two wells were collected from the kitchen taps (see Photos 10-12). The well at 9240 Highway 85-87 is located in the basement of a wellhouse. A 30 gallon pressure tank is located next to the wellhead (see Photos 13-15). Sample CA-GW-4 was collected from an exterior faucet on the west side of the McCall residence (see Photo #16).

Each residential well was run for at least 10 minutes prior to sample collection. All of the residents had also used well water on November 2 prior to sampling.

3.2 Surface Water and Sediment Sampling

Surface water and sediment samples were collected from Fountain Creek, and a wetland between the site and the creek, on November 3, 1993. A surface water and a sediment sample (CA-SW-2/CA-SE-2) were collected in an outflow channel located at the southwestern edge of a wetland that surrounds the Cottonwood Meadows Pond (see Figure 2). This pond lies in the southern portion of Fountain Creek Regional Park east of the creek. Cattails, duckweed and watercress were abundant at this location (see Photo 17 and 18). The sediment was a black, organic silt.

An upstream sediment and a surface water sample (CA-SE-1/CA-SW-1) were collected in Fountain Creek due west of the site in the area indicated in Figure 2 (see Photos 19 and 20). The stream substrate at this location consisted of coarse sand and fine gravel. A downstream sediment and a surface water sample (CA-SE-3/CA-SW-3) were collected in the creek at a point roughly 20 yards downstream from the southern edge of a rip-rapped channel (see Photos 21-23). The rip-rapped channel is located in Hanson Park, a Fountain city park adjacent to the south edge of Fountain Creek Regional Park. The stream bottom at this location consisted of sand and gravel.

Table 1 shows the pH and conductivity readings obtained on the ground water and surface water samples.

3.3 Quality Control Samples

A duplicate sample, CA-GW-03, was collected from the Marshall Welding Shop/Lengacher residential well. A rinsate blank, CA-GW-6, was collected by pouring deionized, metals-free water over a stainless steel trowel and into a stainless steel bowl. The contents of the bowl were then emptied into the appropriate sample containers. The deionized water used came from the Ricca Chemical Company in Arlington, Texas (Lot #G268).

A separate field blank was not collected. Matrix spike/matrix spike duplicate volumes were collected for CA-GW-4 and CA-SE-2. The trip blank was designated CA-TB-1.

3.4 Sample Documentation and Shipment

The sample container sizes and preservatives added to samples collected at the site are indicated in Table 2. Protocols for NEIC chain-of-custody were strictly followed. Sampling documentation, including sample identification numbers, sample tag numbers, CLP sample numbers and chain-of-custody form numbers are summarized in Table 3. All offsite samples were part of CLP case #21151.

The base-neutral acid extractable and volatile organic fractions of each sample were shipped to American Analytical and Technical Services in Baton Rouge, Louisiana under Federal Express Airbill #6880041070. The total metals and cyanide fractions of each sample were shipped to Weyerhaeuser Analytical and Testing Services in Federal Way, Washington under Federal Express Airbill #6880041066. All samples were shipped on November 4, 1993. All samples are to be analyzed under routine analytical services (RAS) protocols at low or environmental concentrations.

4.0 ONSITE SAMPLING

Onsite sampling was conducted on November 16, 1993. Split samples were provided to Randy Evans, Project Engineer, Stewart Environmental Consultants (SEC), Fort Collins, Colorado, on behalf of David Jenkins, the site owner.

4.1 Soil Sampling

Three onsite soil samples and one offsite, background soil sample were collected. The soil sampling locations, which are shown in Figure 3, differed from those specified in the SAP. Background sample CA-SO-1 was collected on property owned by Nancy and Theodore Hanson at 1601 Rustique Drive (see Figure 2 for location and Photos 24 and 25). This property is located southeast of the site, not directly to the east as indicated in the SAP.

Sample CA-SO-2 was collected between the fence and berm wall of the tailings pad in the northwest corner of the site, not outside the fence at this location as specified in the SAP (see Photo #26). The soil at this location was coarse sand with some silt and pebbles. A dull greenish-blue stain was visible in the soil. CA-SO-3 was collected at a location slightly to the north of that shown in the SAP (see Photo #27). The soil at this location

contained silt and clayey sand, medium to dark brown with some gray streaks. CA-SO-4 was moved from due north of the main building to a location east-northeast of the northeast sump and east of the berm wall around the sump areas (see Photo #28). A moist, dark brown, silty sand soil with some stones was present at this location.

Soil at these selected sampling locations was generally finer-grained than the soil found at the locations specified in the SAP. SEC collected split soil samples in four 4-ounce jars.

4.2 Sump Sampling

Samples CA-SU-1 and CA-SU-2 were collected from the northwest and northeast sumps, respectively (see Figure 3). Runoff has inundated the sumps and spread onto concrete surface adjacent to the sumps (see Photos 29-32). The sumps were sampled using a peristaltic pump and teflon tubing (see Photo #33). Silicone tubing was used inside the pump head.

Water in the northwest sump was clear and had a pH in the 6 range. Water in the northeast sump contained suspended organic debris, decomposed leaves, detritus, etc. Organic materials have also accumulated in the bottom of both sumps. The sampling equipment and techniques used did not disturb the settled material in the sump bottoms.

SEC collected split samples from the sumps using the following containers and preservatives:

- 2 one-liter amber jars for BNAs
- 1 500-ml brown Nalgene bottle, NaOH added for Cyanide
- 1 one-liter polyethylene bottle, HNO₃ added for Total Metals
- 3 40-ml vials with septum lids for Volatile Organics (no preservative)

4.3 Quality Control Samples

A duplicate sample, CA-SU-3, was collected from the northeast sump. A rinsate blank, CA-SU-4, was collected by pouring deionized, metals-free water over a decontaminated stainless steel spoon into a stainless steel bowl, then pouring the rinsate into the

appropriate sample containers. Matrix spike/matrix spike duplicate (MS/MSD) volumes were collected for CA-SU-1 and CA-SO-3. The trip blank was designated CA-TB-2.

SEC did not request splits on the duplicate or rinsate blank samples or request additional sample volume for MS/MSD samples.

4.4 Sample Documentation and Shipment

The sample container sizes and preservatives added to samples collected at the site are indicated in Table 2. Protocols for NEIC chain-of-custody were strictly followed. Sampling documentation, including sample identification numbers, sample tag numbers, CLP sample numbers and chain-of-custody form numbers are summarized in Table 4. All onsite samples were part of CLP case #21244.

The base-neutral acid extractable and volatile organic fractions of each sample were shipped to Encotec in Ann Arbor, Michigan under Federal Express Airbill #8064319292. The total metals and cyanide fractions of each sample were shipped to CompuChem Laboratories in Research Triangle Park, North Carolina under Federal Express Airbill #8064319303. All samples were shipped on November 17, 1993. All samples are to be analyzed under routine analytical services (RAS) protocols at low or environmental concentrations.

Mr. Evans stated that the split samples were to be analyzed at the SEC laboratory in Fort Collins.

TABLE 1**Field Measurement Data for Offsite Ground Water and Surface Water Samples**

	<u>pH (a)</u>	<u>Conductivity (b)</u>
CA-GW-1	7.00	1,400
CA-GW-2	7.03	1,290
CA-GW-4	6.94	1,270
CA-GW-5	6.93	1,430
CA-GW-7	6.42	1,500
CA-GW-8	6.54	--
CA-SW-1	7.86	880
CA-SW-2	6.9 - 7.3	990
CA-SW-3	7.68	800

(a) 2 point calibration with 4.00 and 7.00 buffer solutions.

(b) Calibration to 700 μ mho standard solution. No air calibration to 0 μ mho

(a) and (b) Measurements made with DSP-3 Presto-Tek pH/conductivity meter.

TABLE 2**Sample Bottles and Preservatives Used for Calmet Sampling**

LOW CONCENTRATION	
Organics	
VOA (water)	2 - 40 ml vials, 4 drops of hydrochloric acid
BNA (water)	1 - 80 oz. amber glass jug, cooled to 4°C
VOA (soil/sediment)	2 - 120 ml glass vials, cooled to 4°C
BNA (soil/sediment)	1 - 4 oz. glass jar, cooled to 4°C
Inorganics	
Metals (water)	1 - 1 liter poly, Nitric acid to pH <2
Cyanide (water)	1 - 1 liter poly, sodium hydroxide to pH >12
Metals and cyanide (soil/sediment)	1 - 8 oz glass jar

TABLE 3
SAMPLE DOCUMENTATION SUMMARY FOR CALMET OFFSITE SAMPLES, CASE #21151

Station No.	ORGANICS			INORGANICS			Sample Date/Time
	CLP ID	Tag No.		CLP ID	Tag No.		
		VOA	BNA		Metals	Cyanide	
CA-GW-1	HP296	8-96854 (G) 8-96853 (G)	8-96855 (F)	MHBM02	8-96851 (C)	8-96852 (D)	11-2-93/1555
CA-GW-2	HP297	8-96859 (G) 8-96858 (G)	8-96860 (F)	MHBM03	8-96856 (C)	8-96857 (D)	11-2-93/1525
CA-GW-3	HP298	8-96864 (G) 8-96863 (G)	8-96865 (F)	MHBM04	8-96861 (C)	8-96862 (D)	11-2-93/1530
CA-GW-4	HP299	8-96869 (G) 8-96868 (G) 8-96752 (E) 8-96751 (E) 8-96953 (E) 8-96845 (E)	8-96870 (F) 8-96757 (H) 8-96754 (E)	MHBM05	8-96866 (C) 8-96848 (C) 8-96849 (C)	8-96867 (D) 8-96836 (D) 8-96850 (D)	11-2-93/1455
CA-GW-5	HP072	8-96874 (G) 8-96873 (G)	8-96875 (F)	MHBM06	8-96871 (C)	8-96872 (D)	11-2-93/1435
CA-GW-6	HP073	8-96879 (G) 8-96878 (G)	8-96880 (F)	MHBM07	8-96876 (C)	8-96877 (D)	11-3-93/1545
CA-GW-7	HP074	8-96884 (G) 8-96883 (G)	8-96885 (H)	MHBM08	8-96881 (C)	8-96882 (D)	11-2-93/1355
CA-GW-8	HP075	8-96890 (G) 8-96889 (G)	8-96891 (H)	MHBM09	8-96886 (C)	8-96888 (D)	11-2-93/1325
CA-SW-1	HP170	8-96804 (E) 8-96803 (E)	8-96805 (H)	MHBM19	8-96801 (B)	8-96802 (D)	11-3-93/1440
CA-SW-2	HP171	8-96808 (E) 8-96809 (E)	8-96810 (H)	MHBM20	8-96806 (B)	8-96807 (D)	11-3-93/1400
CA-SW-3	HP172	8-96813 (E) 8-96814 (E)	8-96815 (H)	MHBM21	8-96811 (B)	8-96812 (D)	11-3-93/1530

- (B) Chain of Custody Record #1016297
(C) C of C Record #1016294
(D) C of C record #1016296
(E) C of C Record #0016408
(F) C of C Record #0016402 (BNA)
(G) C of C Record #0016404 (VOA)
(H) C of C Record #0016403 (BNA)

TABLE 3 (Continued)
SAMPLE DOCUMENTATION SUMMARY FOR CALMET OFFSITE SAMPLES, CASE #21151

Station No.	ORGANICS			INORGANICS			Sample Date/Time
	CLP ID	Tag No.		CLP ID	Tag No.		
		VOA	BNA		Metals	Cyanide	
CA-SE-1	HP173 (D)	8-96835 8-96834	8-96833	MHBM22 (A)	8-96832	8-96832	11-3-93/1445
CA-SE-2	HP174 (D)	8-96839 8-96838 8-96759 8-96758	8-96840	MHBM23 (A)	8-96837	8-96837	11-3-93/1405
CA-SE-3	HP175 (D)	8-96843 8-96842	8-96844	MHBM24 (A)	8-96841	8-96841	11-3-93/1530
CA-TB-1	HP176 (D)	8-96756 8-96755	-	-	-	-	11-3-93/1535

(A) Chain of Custody Record #1016299
(D) Chain of Custody Record #0016409

TABLE 4

Sample Documentation Summary for Calmet Onsite Samples, Case #21244

Station No.	ORGANICS			INORGANICS			Sample Date/Time
	CLP ID	VOA	BNA	CLP ID	Tag No.		
					Metals	Cyanide	
CA-SO-1	HP077 (C)	8-96819 8-96818	8-96817	MHBM14 (D)	8-96816	8-96816	11-16-93/1515
CA-SO-2	HP078 (C)	8-96823 8-96822	8-96821	MHBM15 (D)	8-96820	8-96820	11-16-93/1110
CA-SO-3	HP080 (C)	8-96826 8-96825 8-96607 8-96605	8-96837	MHBM16 (D)	8-96824	8-96824	11-16-93/1150
CA-SO-4	HP168 (C)	8-96830 8-96829	8-96831	MHBM17 (D)	8-96828	8-96828	11-16-93/1125
CA-SU-1	HP169	8-96900 (B) 8-96898 (B)	8-96887 (A)	MHBM18 (E)	8-96837	8-96899	11-16-93/1330
CA-SU-1	HP169	8-96618 (B) 8-96617 (B) 8-96620 (B) 8-96619 (B)	8-96622 (A) 8-96621 (A)	MHBM18 (D)	8-96624 8-96623	8-96625 8-96626	11-16-93/1330
CA-SU-2	HP178	8-96608 (B) 8-96606 (B)	8-96609 (A)	MHBC90 (E)	8-96611	8-96610	11-16-93/1430
CA-SU-3	HP179	8-96612 (B) 8-96613 (B)	8-96615 (A)	MHBC91 (E)	8-96616	8-96614	11-16-93/1450
CA-SU-4	HP076	8-96631 (B) 8-96630 (B)	8-96632 (A)	MHBM10 (E)	8-96634	8-96633	11-16-93/1125
CA-TB-2	HP180	8-96629 (B) 8-96627 (B)	-	-	-	-	11-16-93/1540

- (A) Chain of Custody Record #0016410
 (B) C of C #0016411
 (C) C of C #0016406
 (D) C of C #1016302
 (E) C of C #1016303

TABLE 5

Sample Rationale Table

Site Name: Calmet
 Address: 1710 Rustique Drive
 City: Fountain, Colorado

Project Team Leader: Mark Lunsford
 Proposed Sampling Date: September 1993
 County: El Paso

Sample ID	Sample Type	Laboratory Parameters						Location	Rationale
		TAL Metals	Cyanide	VOA	BNA	Dup	Spike		
CA-GW-1	Ground Water	/	/	/	/			Well at 1718 Rustique Drive	Background for upgradient well.
CA-GW-2	Ground Water	/	/	/	/			Well at Marshall Welding Shop	Test for release to alluvial aquifer.
CA-GW-3	Ground Water	/	/			/		Duplicate of CA-GW-2	Lab QA/QC.
CA-GW-4	Ground Water	/	/	/	/		/	Well at 9240 Hwy 85-87	Test for release to alluvial aquifer. Lab QA/QC.
CA-GW-5	Ground Water	/	/	/	/			Well at 1005 Santa Fe Avenue	Test for release to alluvial aquifer.
CA-GW-6	Ground Water	/	/	/	/			Rinse Blank	Check for field contamination of samples.
CA-GW-7	Ground Water	/	/	/	/			Well at 1201 N. El Paso Street	Test for release to alluvial aquifer.
CA-GW-8	Ground Water	/	/	/	/			Fountain City Well #4	Test for release to municipal source.
CA-SO-1	Soil	/	/	/	/			Offsite - 1601 Rustique Drive	Background
CA-SO-2	Soil	/	/	/	/			Test for release to soil	NW of Tailing Pad; Waste Characterization.
CA-SO-3	Soil	/	/	/	/		/	Test for release to soil	West of Bldg.; Lab QA/QC
CA-SO-4	Soil	/	/	/	/			Test for release to soil	NE of NE Sump; Waste Characterization
CA-SU-1	Water	/	/	/	/		/	Northwest Sump	Waste Characterization; Lab QA/QC
CA-SU-2	Water	/	/	/	/			Northeast Sump	Waste Characterization
CA-SU-3	Water	/	/	/	/	/		Northeast Sump	Lab QA/QC
CA-SU-4	Water	/	/	/	/			Rinse Blank	Check for field contamination of samples
CA-SW-1	Water	/	/	/	/			Upstream in Fountain Creek	Background
CA-SW-2	Water	/	/	/	/			Outflow channel from wetland	Test for observed releases via GW to SW
CA-SW-3	Water	/	/	/	/			Downstream in Fountain Creek	Test for observed releases via GW to SW
CA-SE-1	Sediment	/	/	/	/			Upstream in Fountain Creek	Background
CA-SE-2	Sediment	/	/	/	/		/	Outflow channel from wetland	Test for observed releases via GW to SW Lab QA/QC
CA-SE-3	Sediment	/	/	/	/			Downstream in Fountain Creek	Test for observed releases via GW to SW

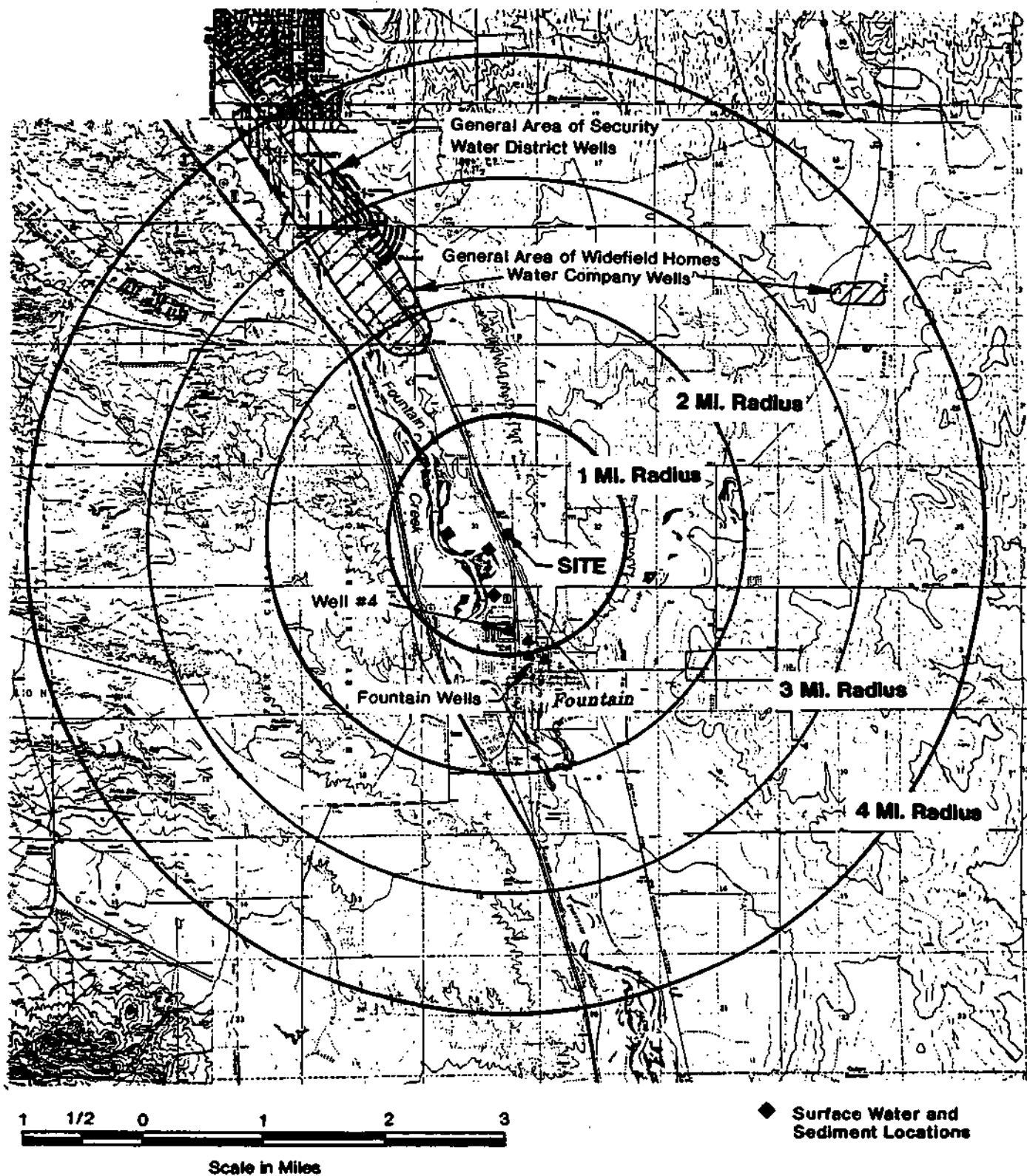


Figure 1

4-Mile Radius Map
CALMET
 Fountain, Colorado

Source: USGS 7.5' Quad. Map of Fountain, Cheyenne Mountain & Elsmere, Colorado

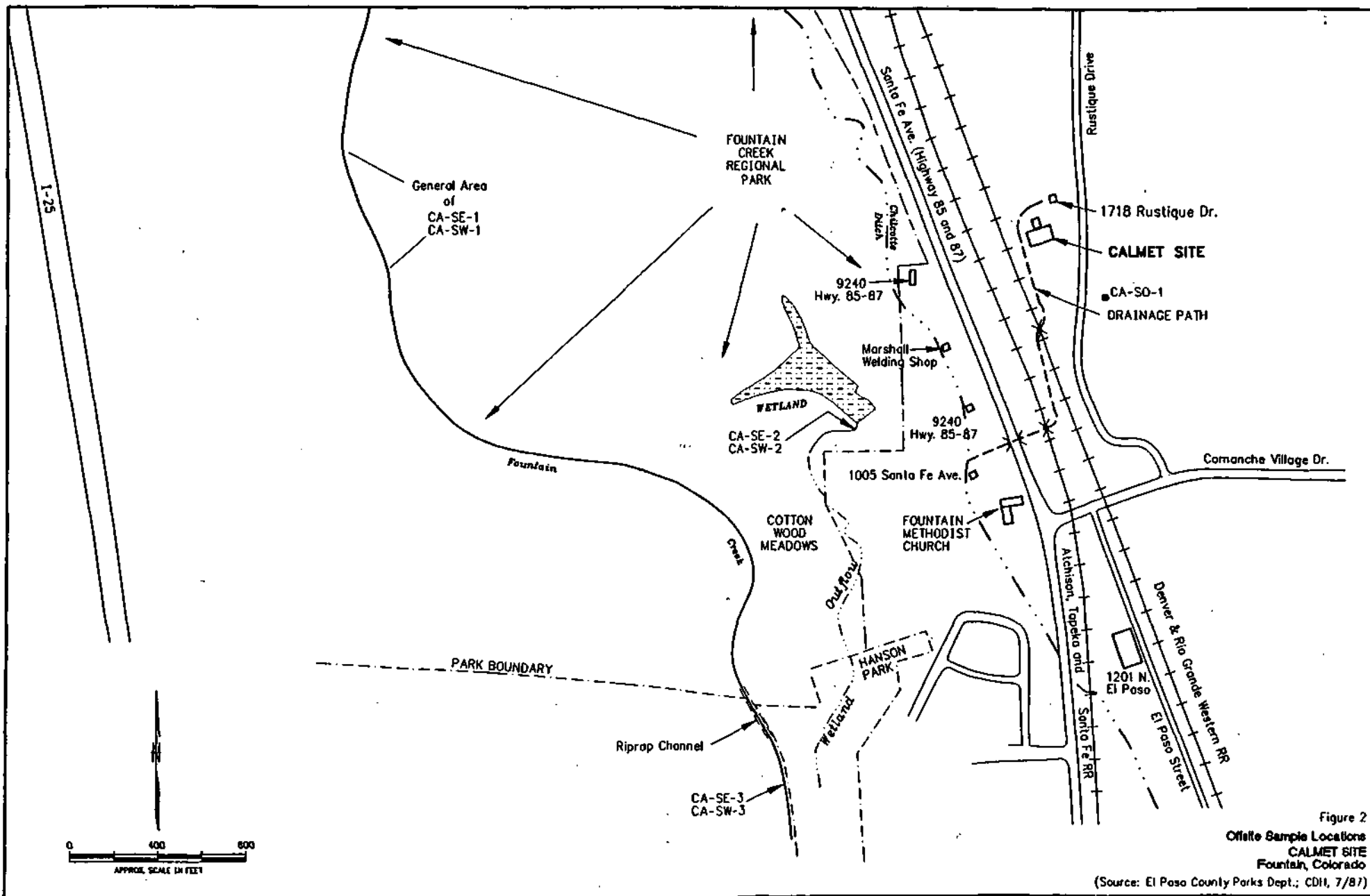


Figure 2
 Offsite Sample Locations
 CALMET SITE
 Fountain, Colorado

(Source: El Paso County Parks Dept.; CDH, 7/87)

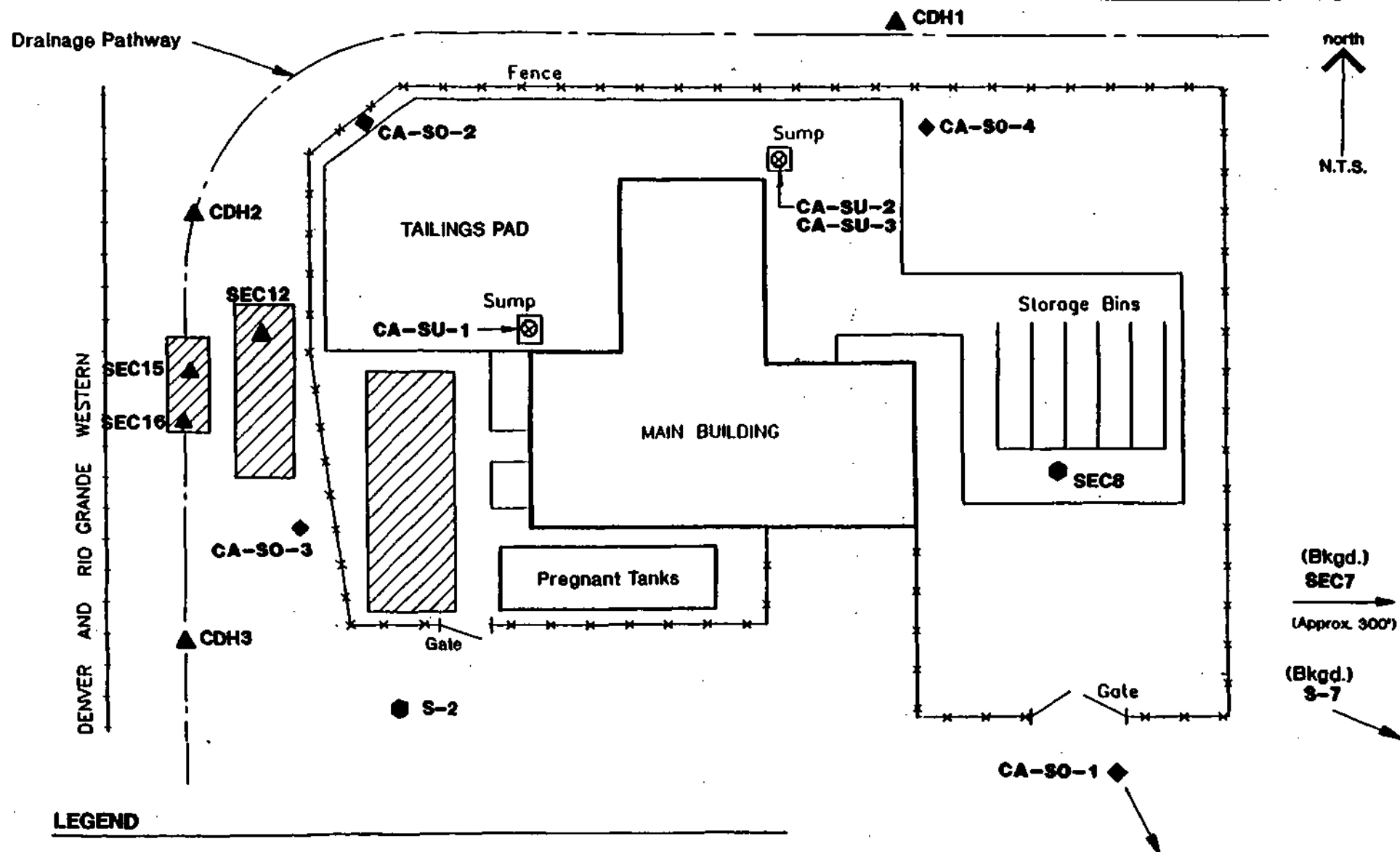


Figure 3

Onsite Sample Locations
Calmet
 Fountain, Colorado

Sources: SEC, 1991; E & E, 4/92 and 7/90; CDH, 7/20/87



Photo No.

1

Site Name:

Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443



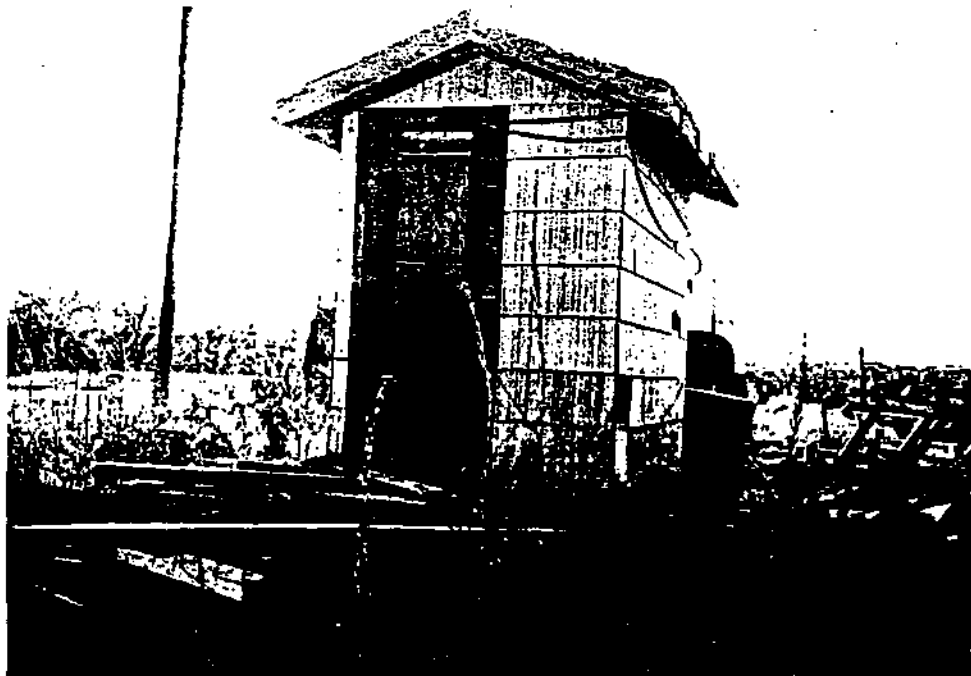
Photographer/Witness M. Lunsford

Date 11/2/93 Time _____ Direction West

Description Wellhouse for Fountain City Well #4 at northwest corner of
Linda Vista and Dale Street.

Photo No.

2



Photographer/Witness M. Lunsford

Date 11/2/93 Time _____ Direction West

Description Wellhouse for Marshall Welding Shop and Lengacher residence
at 9060 Highway 85-87.

Page 1

Of 24



Photo No.

3

Site Name:

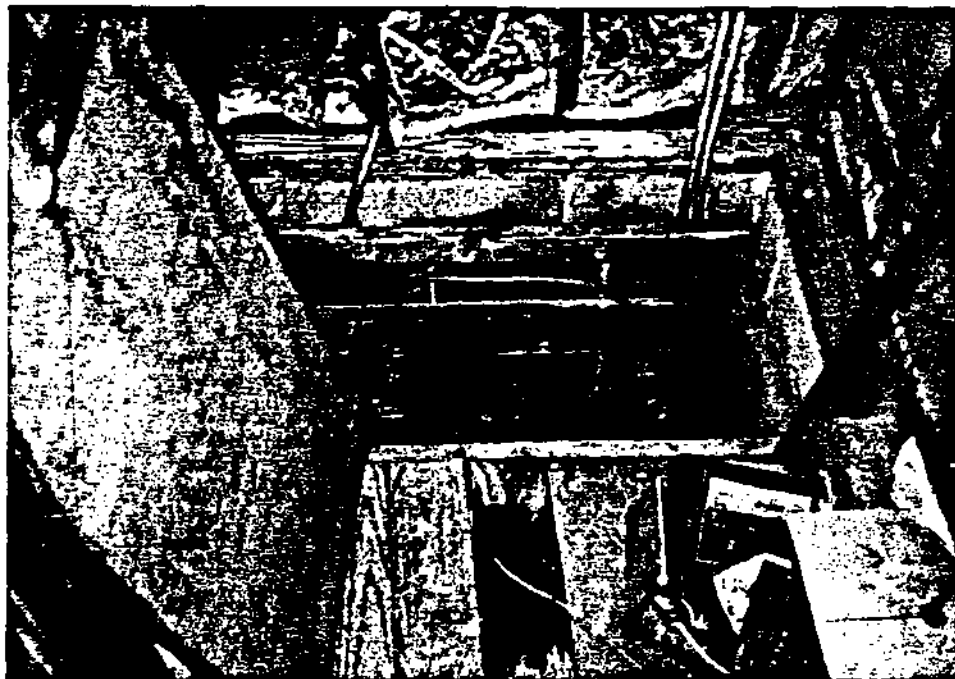
Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443



Photographer/Witness M. Lunsford

Date 11/2/93

Time

Direction

Description Interior of Wellhouse next to Marshall Welding Shop.

Removable floorboard covers entryway to basement.

Photo No.

4



Photographer/Witness M. Lunsford

Date 11/2/93

Time

Direction

West

Description Open Wellhead in basement floor of Wellhouse next to Marshall

Welding Shop. The rope holds a submersible pump in place.

Page 2

Of 24



Photo No.

5



Site Name:

Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443

Photographer/Witness M. Lunsford

Date 11/2/93

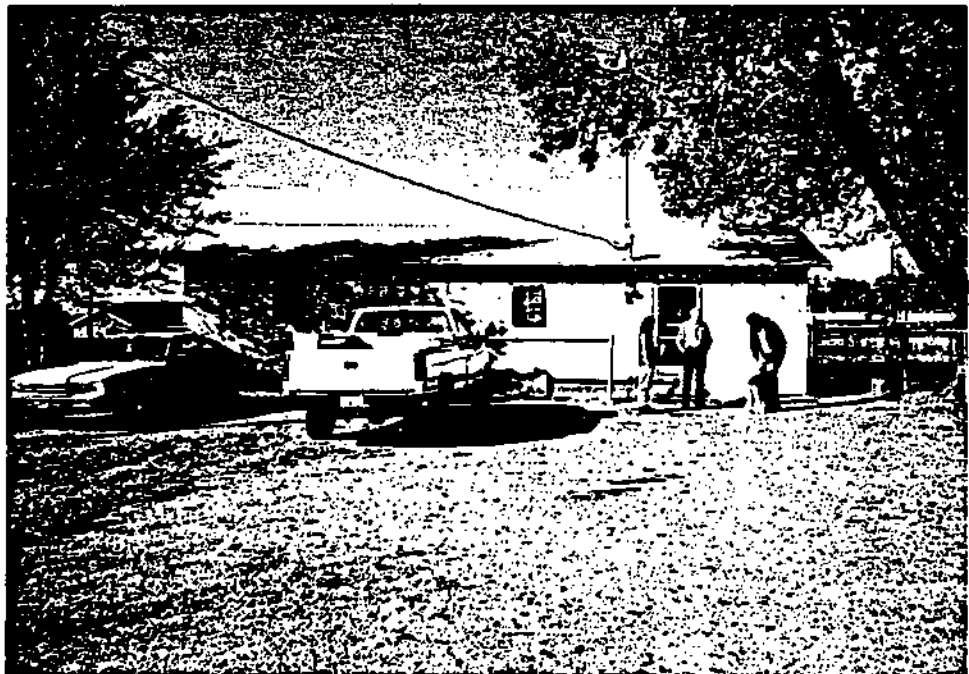
Time

Direction NW

Description Lengacher residence at 9060 Highway 85-87.

Photo No.

6



Photographer/Witness M. Lunsford

Date 11/2/93

Time

Direction North

Description Trailer at 1201 N. El Paso Street.

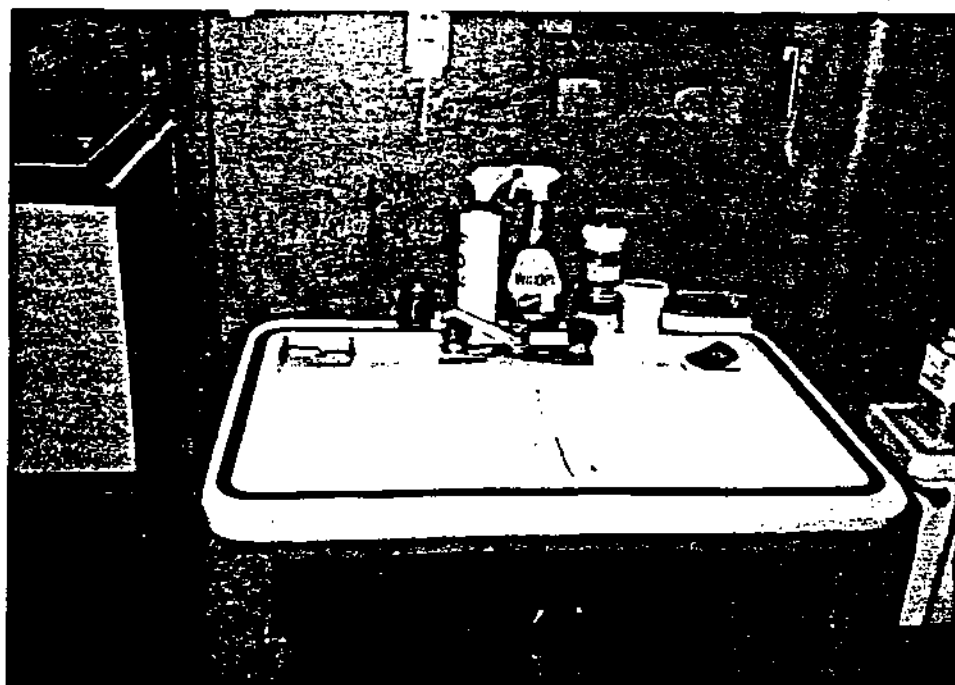
Page 3

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Photo No.

7



Site Name:

Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443

Photographer/Witness M. Lunsford

Date 11/2/93

Time _____

Direction _____

Description Sink and faucet in interior of trailer at 1201 N. El Paso Street.

Sample CA-GW-7 was collected from the faucet.

Photo No.

8



Photographer/Witness M. Lunsford

Date 11/2/93

Time _____

Direction NNW

Description Warnecke residence at 1718 Rustique Drive.

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Photo No.

9



Site Name:

Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443

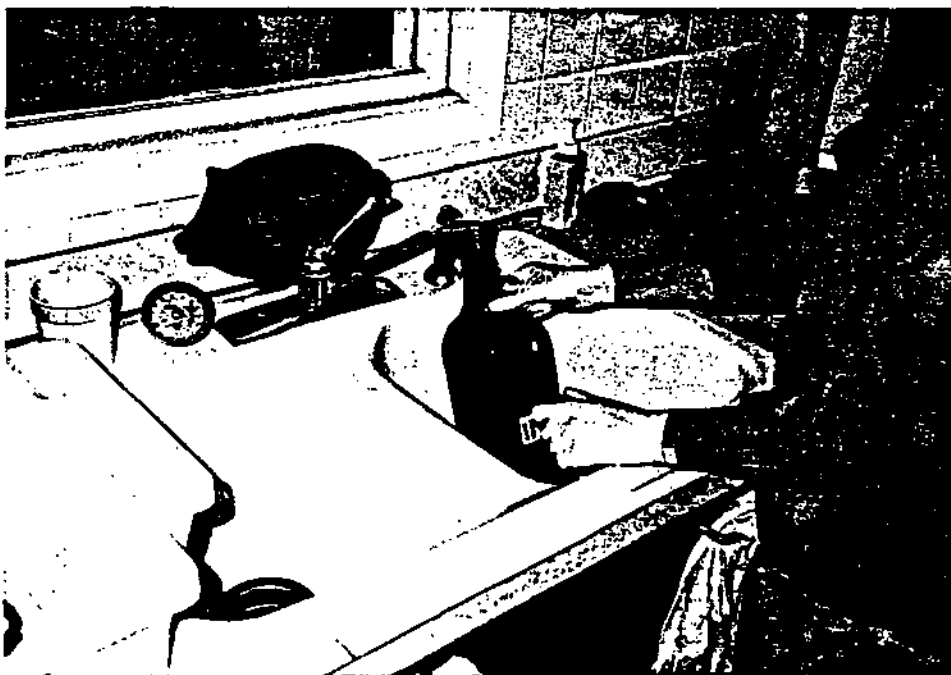
Photographer/Witness M. Lunsford

Date 11/16/93 Time _____ Direction NW

Description Wellhead and hand pump for well at 1718 Rustique Drive. Low structure behind well is a cover for the hand-dug well.

Photo No.

10



Photographer/Witness M. Lunsford

Date 11/2/93 Time _____ Direction _____

Description Kitchen sink at 1718 Rustique Drive. Sample CA-GW-1 was collected from the faucet.

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Of 24



Photo No.

11

Site Name:

Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443



Photographer/Witness M. Lunsford

Date 11/2/93

Time _____

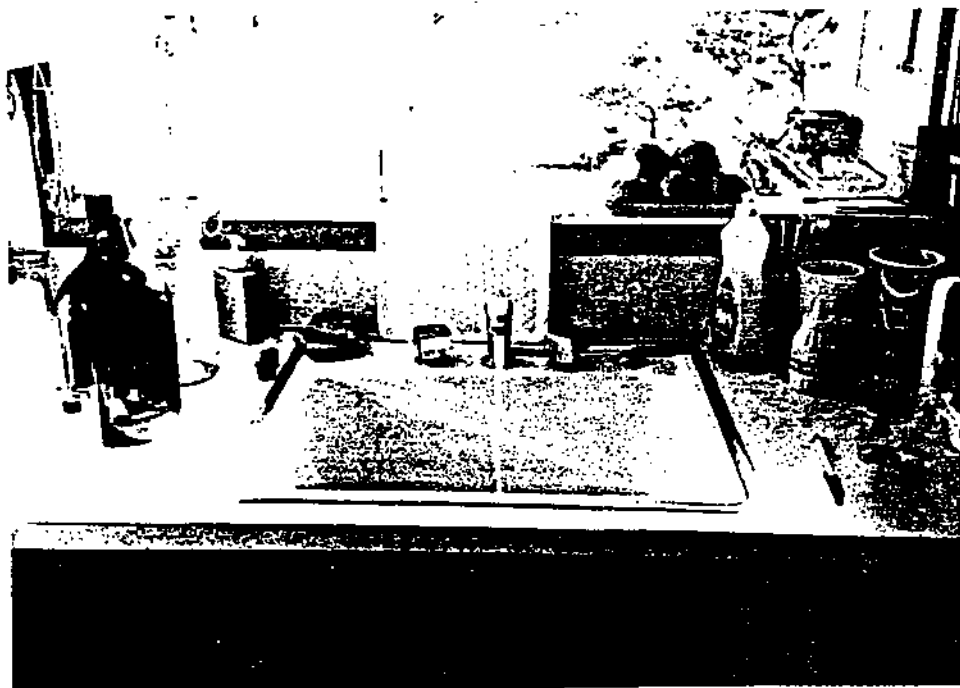
Direction _____

West

Description Hanson residence at 1005 Santa Fe Avenue.

Photo No.

12



Photographer/Witness M. Lunsford

Date 11/2/93

Time _____

Direction _____

Description Kitchen sink at 1005 Santa Fe Avenue. Sample CA-GW-5 was collected from the faucet.

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Photo No.

13



Site Name:

Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443

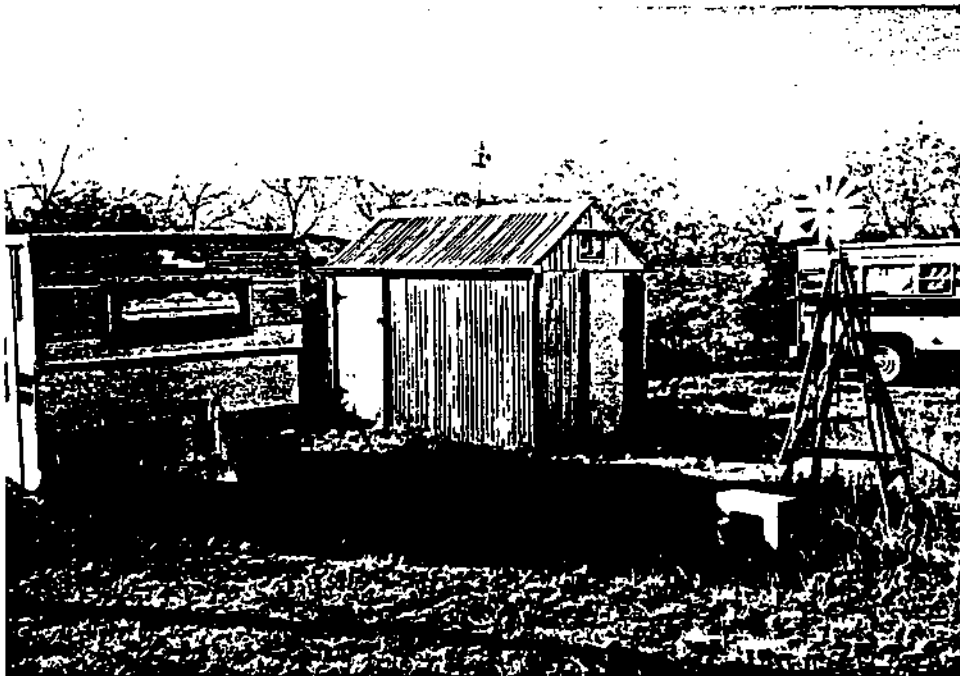
Photographer/Witness M. Lunsford

Date 11/2/93 Time Direction NW

Description McCall residence at 9240 Highway 85-87.

Photo No.

14



Photographer/Witness M. Lunsford

Date 11/2/93 Time Direction NW

Description Wellhouse next to McCall residence.

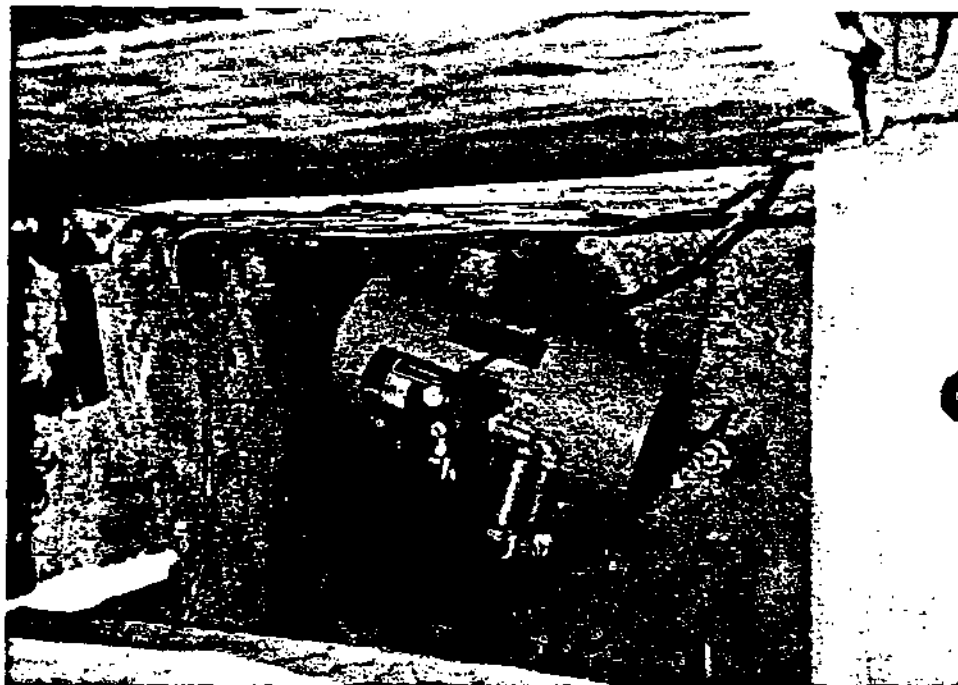
Page 7

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Photo No.

15



Site Name:

Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443

Photographer/Witness M. Lunsford

Date 11/2/93

Time

Direction

Description Basement of Wellhouse at 9240 Highway 85-87.

Wellhead is next to pressure tank which lies beneath a jet pump.

Photo No.

16



Photographer/Witness M. Lunsford

Date 11/2/93

Time

Direction

Description Faucet on west side of McCall residence at 9240 Highway 85-87.

Sample CA-GW-4 was collected from this faucet.

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Photo No.

17

Site Name:

Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443



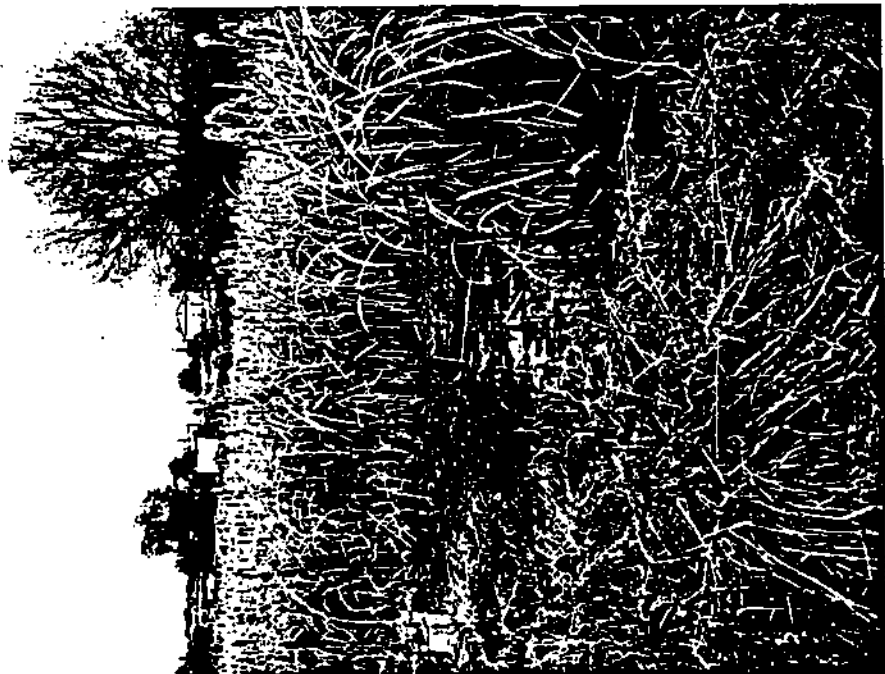
Photographer/Witness M. Lunsford

Date 11/3/93 Time _____ Direction South

Description Wetland outflow in Cottonwood Meadows section of Fountain Creek
Regional Park. Samples CA-SW-2 and CA-SE-2 were collected at this site.

Photo No.

18



Photographer/Witness M. Lunsford

Date 11/3/93 Time _____ Direction ENE

Description View of wetland outflow channel. Gray building on hill in center
of background is the Marshall Welding Shop.

Page 9

Of 24



Photo No.

19

Site Name:

Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443



Photographer/Witness M. Lunsford

Date 11/3/93

Time

Direction

Description View of Fountain Creek looking downstream from upstream

sample location CA-SW-1/CA-SE-1. Rip rap channel is in center background.

Photo No.

20



Photographer/Witness M. Lunsford

Date 11/3/93

Time

Direction

West

Description View across Fountain Creek at upstream sample location.

Sample was collected between east bank and sand bar.

Page 10

Of 24



Photo No.

21

Site Name:

Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443



Photographer/Witness M. Lunsford

Date 11/3/93 Time _____ Direction North

Description View of Fountain Creek upstream from sample location

CA-SE-3/CA-SW-3. Note the rip rap channel.

Photo No.

22



Photographer/Witness M. Lunsford

Date 11/3/93 Time _____ Direction South

Description View of Fountain Creek downstream from sample location

CA-SE-3/CA-SW-3

Page 11

Of 24



Photo No.

23



Site Name:

Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443

Photographer/Witness M. Lunsford

Date 11/3/93

Time

Direction

West

Description View across Fountain Creek. Samples CA-SW-3 and CA-SE-3 were collected near the east bank.

Photo No.

24



Photographer/Witness M. Lunsford

Date 11/16/93

Time

Direction

East

Description Close up of soil background soil sample location CA-SO-1.

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Of 24



Photo No.

25

Site Name:

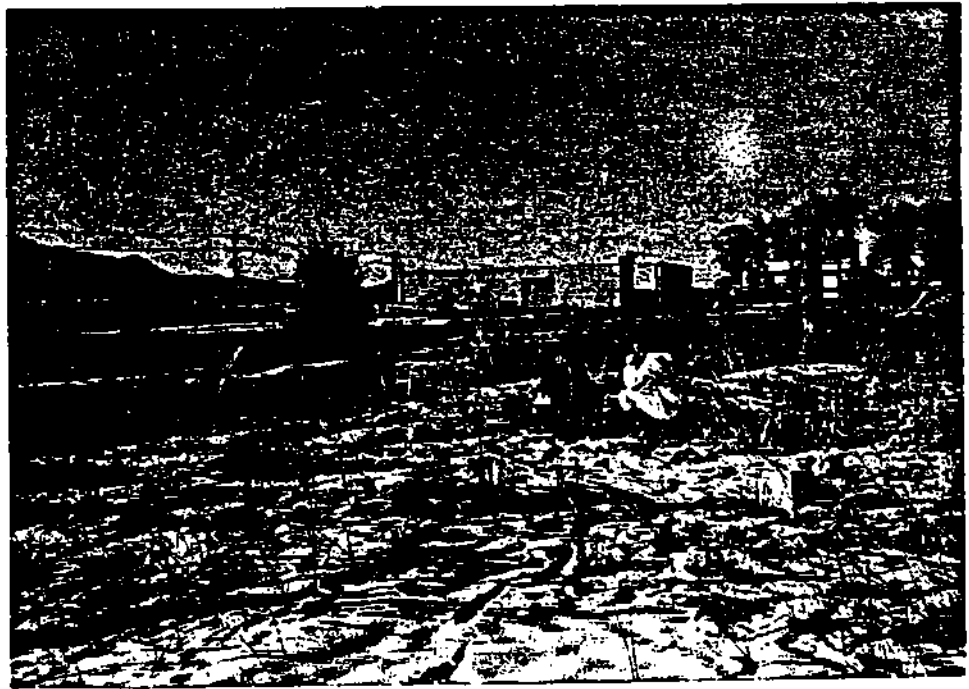
Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443



Photographer/Witness M. Lunsford

Date 11/16/93

Time

Direction NNW

Description Background soil sample location at northwest corner of property at
1601 Rustique Drive. Calmet building is in background.

Photo No.

26



Photographer/Witness M. Lunsford

Date 11/16/93

Time

Direction SE

Description Background soil sample CA-SO-1. Fence posts at left are northwest corner
of property at 1601 Rustique Drive.

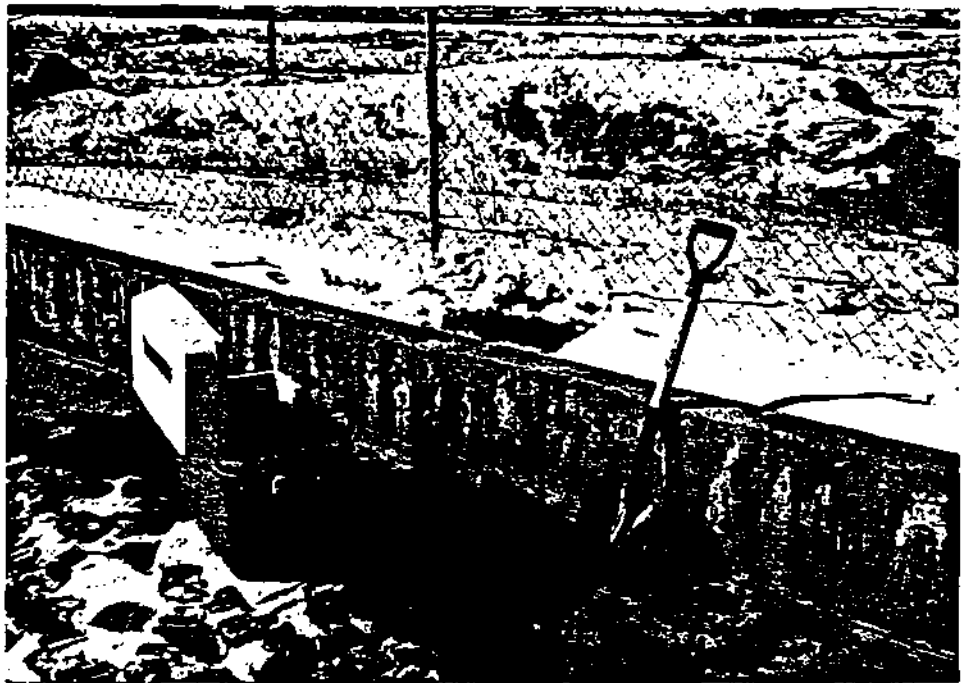
Page 13

Of 24



Photo No.

27



Site Name:

Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443

Photographer/Witness M. Lunsford

Date 11/16/93

Time _____

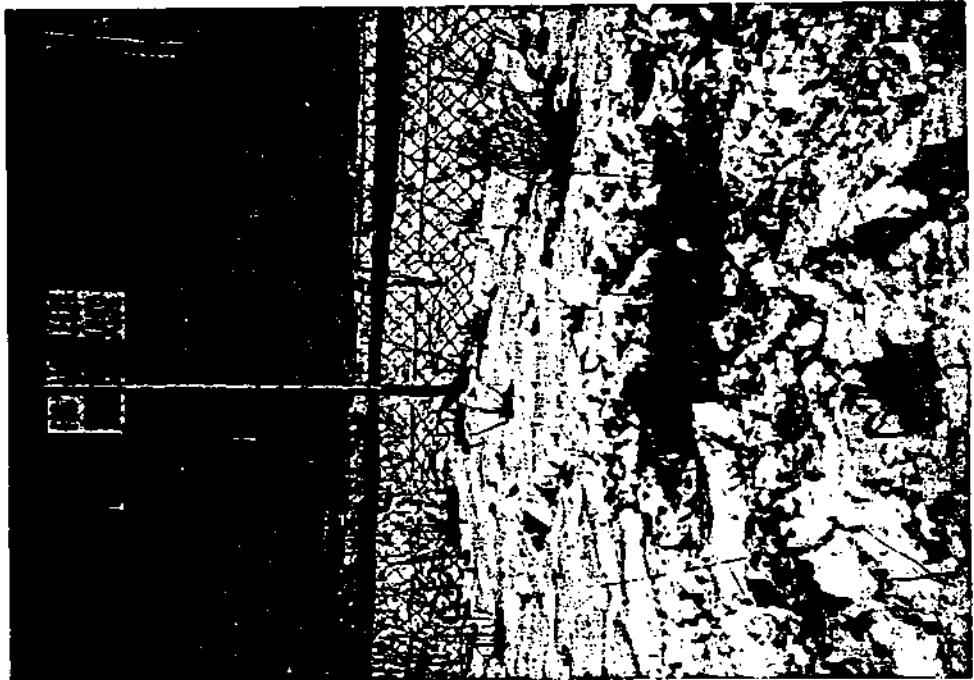
Direction

NW

Description Sample location CA-SO-2 between fence and berm wall at northwest corner of tailings pad.

Photo No.

28



Photographer/Witness M. Lunsford

Date 11/16/93

Time _____

Direction

East

Description Sample location CA-SO-3. West wall of main building is in the background.

Page 15

Of 24



Photo No.

29

Site Name:

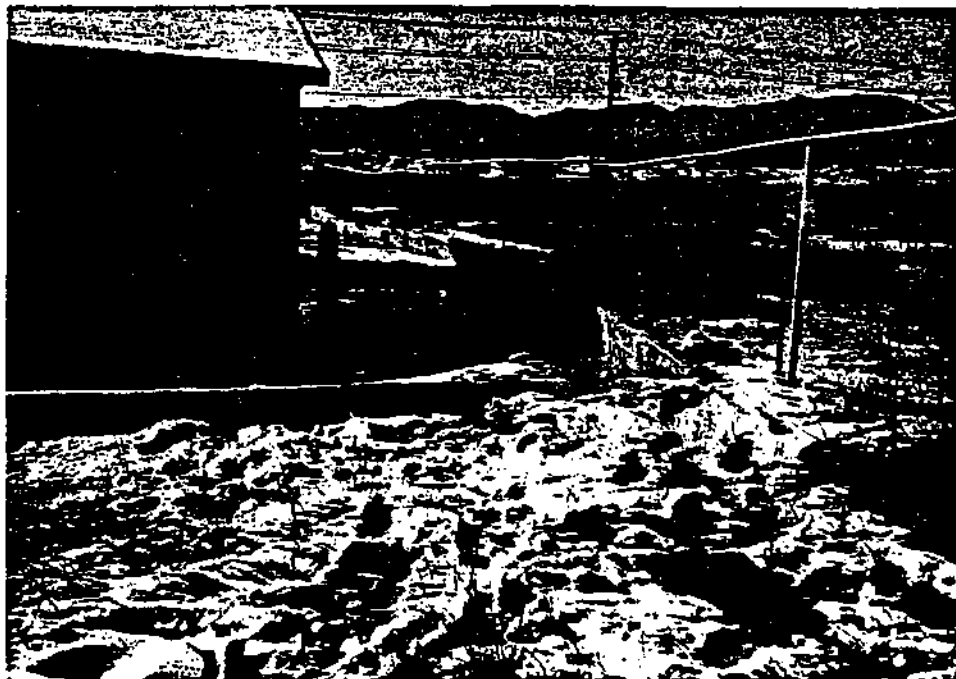
Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443



Photographer/Witness M. Lunsford

Date 11/16/93

Time

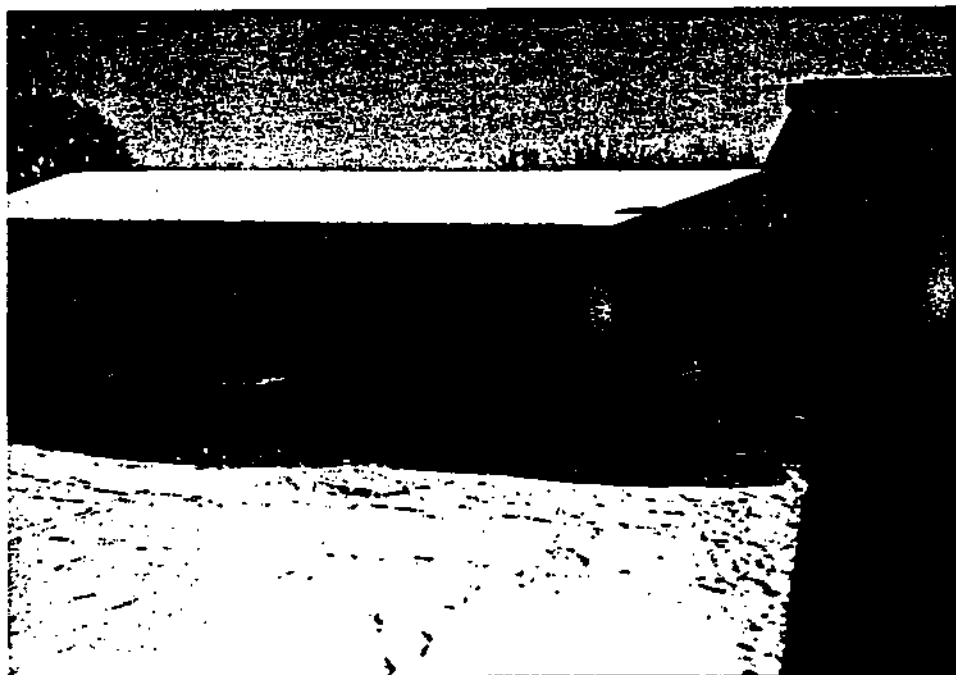
Direction WNW

Description Sample location CA-SO-4 is the dark spot of ground at lower right.

Flooded area of northeast sump is at left center.

Photo No.

30



Photographer/Witness M. Lunsford

Date 11/16/93

Time

Direction East

Description Inundated southeast corner of tailings pad.

Northwest sump is at right.

Page 15

Of 24



Photo No.

31

Site Name:

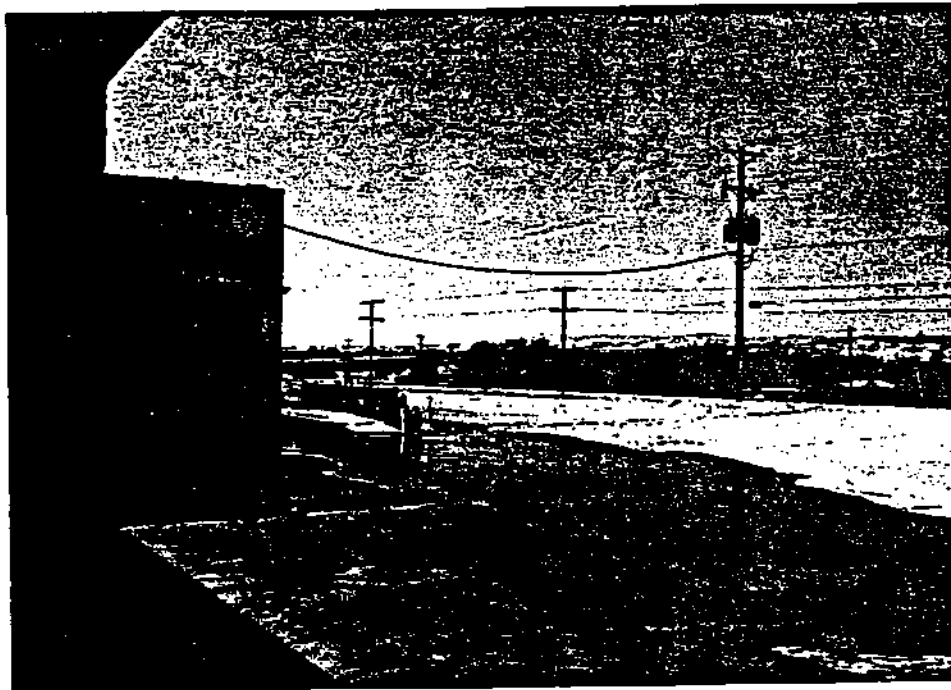
Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443



Photographer/Witness M. Lunsford

Date 11/16/93

Time

Direction

SW

Description Tailings pad. Northwest sump, sample location CA-SU-1, is next to retaining wall at south edge of ice.

Photo No.

32



Photographer/Witness M. Lunsford

Date 11/16/93

Time

Direction

NE

Description Tailings pad. Low berm wall is behind drum.

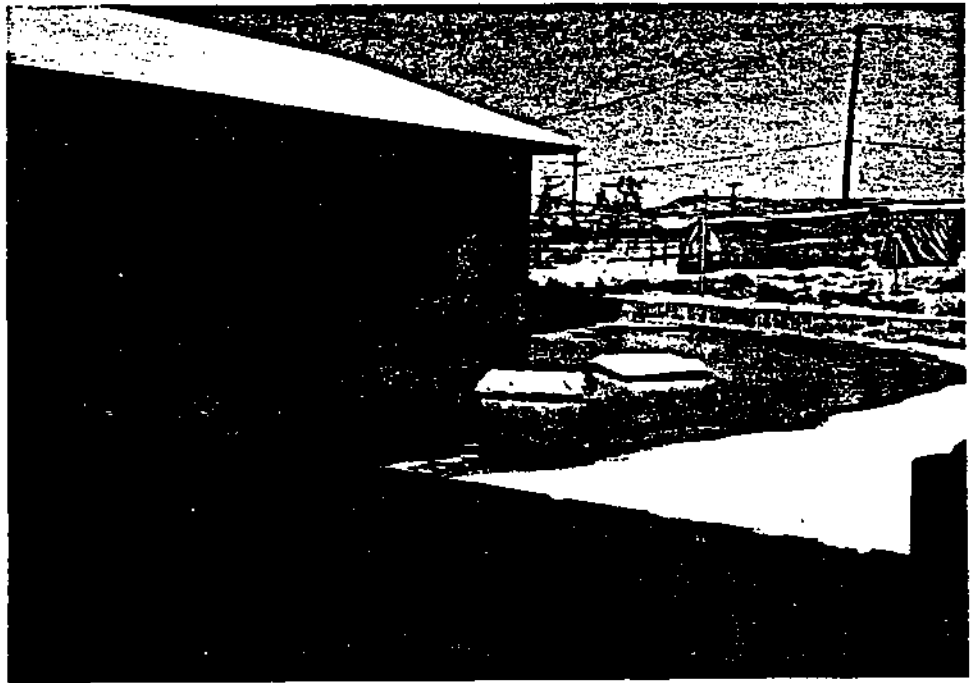
Page 16

Of 24



Photo No.

33



Site Name:

Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443

Photographer/Witness M. Lunsford

Date 11/16/93

Time

Direction

NW

Description Inundated area around northeast sump where CA-SU-2 was collected.

Photo No.

34



Photographer/Witness M. Lunsford

Date 11/16/93

Time

Direction

West

Description Tubing from peristaltic pump leads to northeast sump. Pump was powered by van battery.

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Photo No.

35

Site Name:

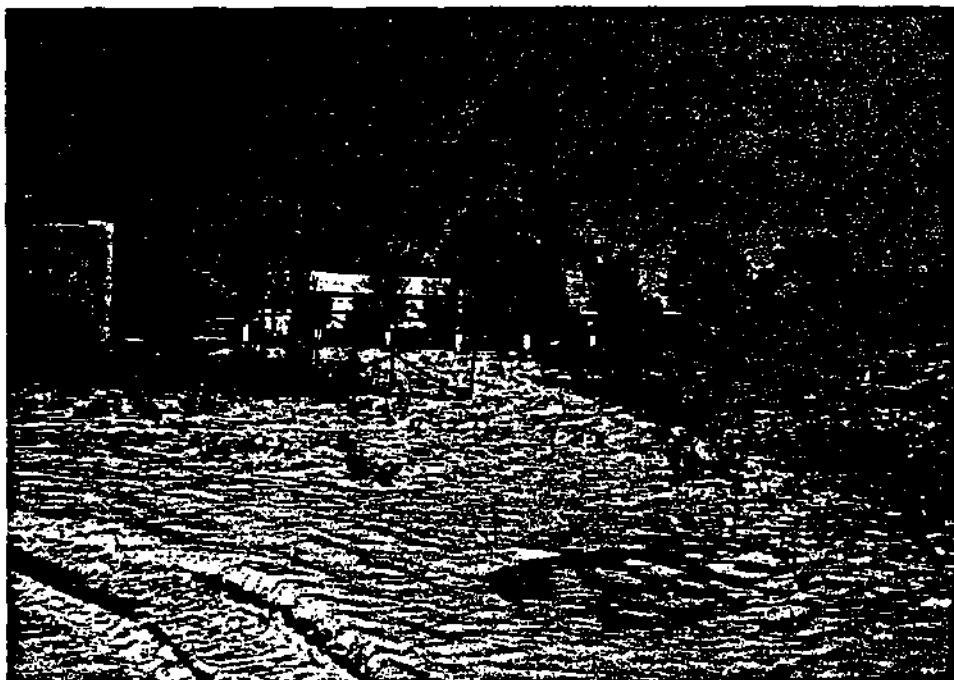
Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443



Photographer/Witness M. Lunsford

Date 11/16/93

Time

Direction

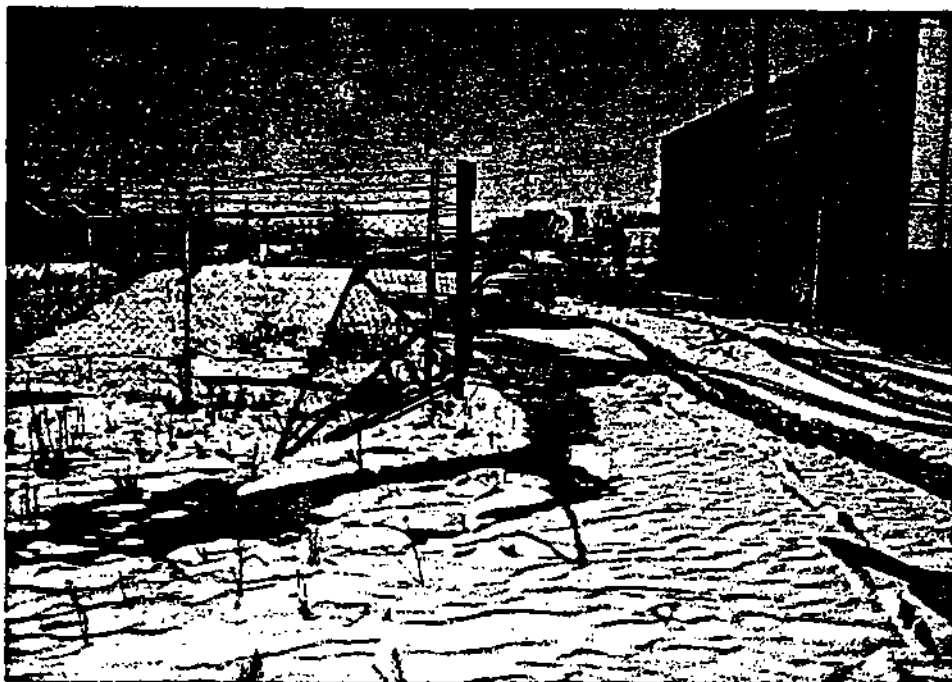
North

Description Unlocked access gate at southeast end of site.

Ore bins are inside the fenced area.

Photo No.

36



Photographer/Witness M. Lunsford

Date 11/16/93

Time

Direction

North

Description Unlocked access gate at southwest end of site.

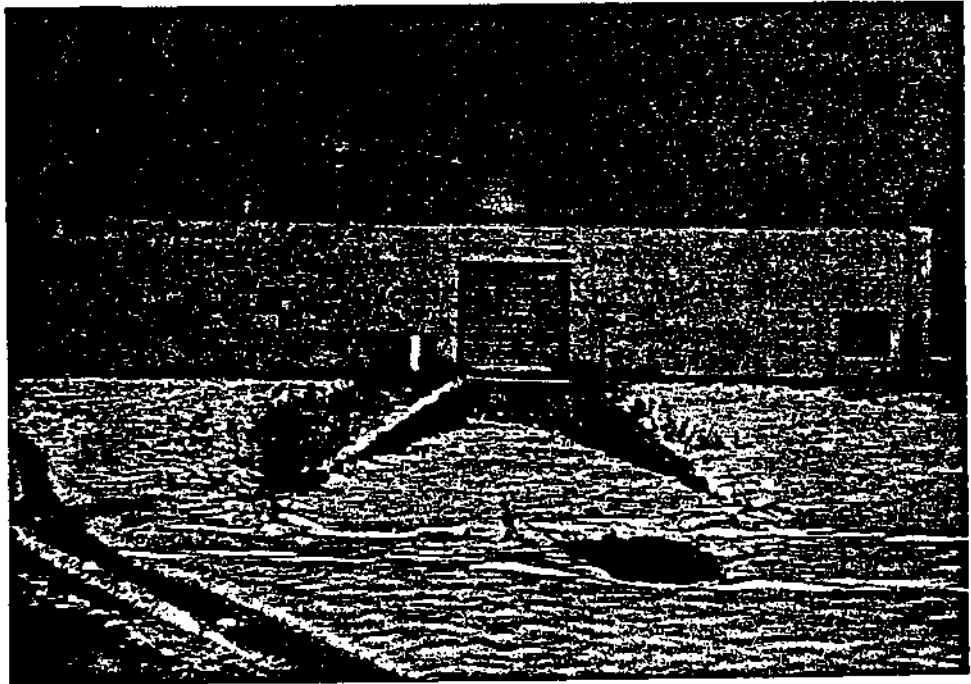
Page 18

Of 24



Photo No.

37



Site Name:

Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443

Photographer/Witness M. Lunsford

Date 11/16/93

Time

Direction

North

Description Truck dock on south side of main building.

Photo No.

38



Photographer/Witness M. Lunsford

Date 11/16/93

Time

Direction

East

Description West wall of main building.

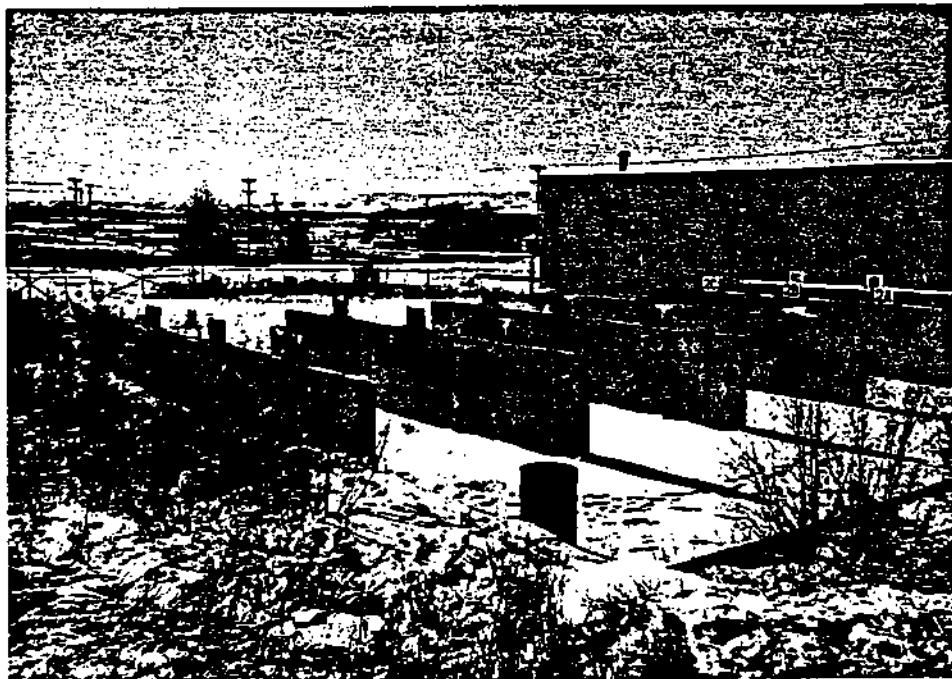
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Of 24



Photo No.

39



Site Name:

Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443

Photographer/Witness M. Lunsford

Date 11/16/93

Time

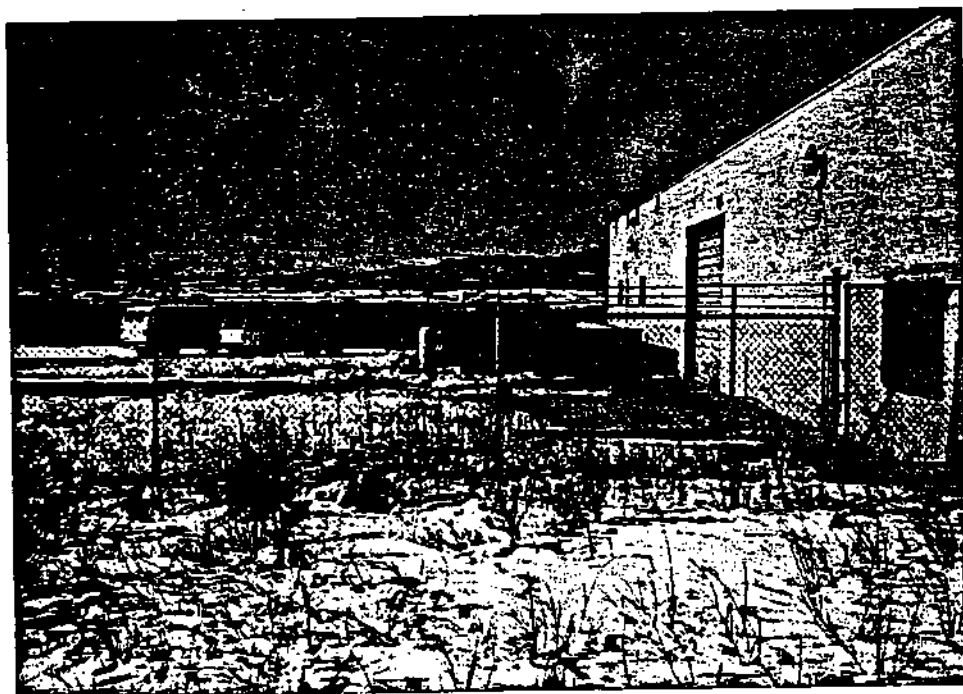
Direction

SW

Description Ore bins at east end of site from site's northeast corner.

Photo No.

40



Photographer/Witness M. Lunsford

Date 11/16/93

Time

Direction

West

Description South wall of main building. Berm walls are former location of pregnant storage tanks.

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Of 24



Photo No.

41

Site Name:

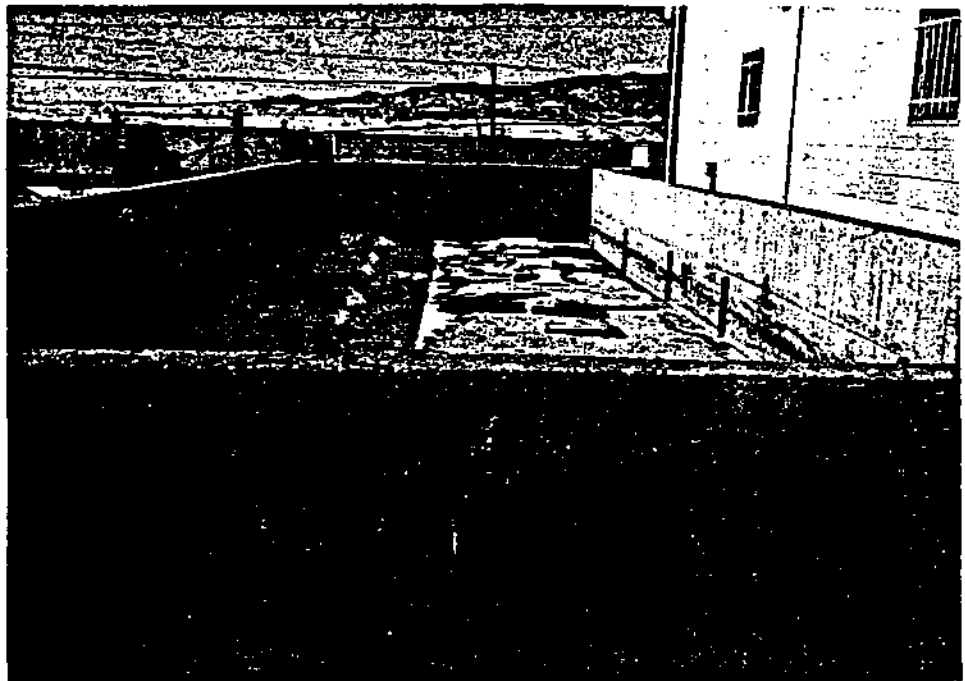
Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443



Photographer/Witness M. Lunsford

Date 11/16/93 Time _____ Direction West

Description Close up view of formed pregnant tank storage area.

Note stains on berm walls.

Photo No.

42



Photographer/Witness M. Lunsford

Date 11/16/93 Time _____ Direction North

Description View of drain hole in northwest corner of former
pregnant tank storage area.

Page 21

Of 24



Photo No.

43

Site Name:

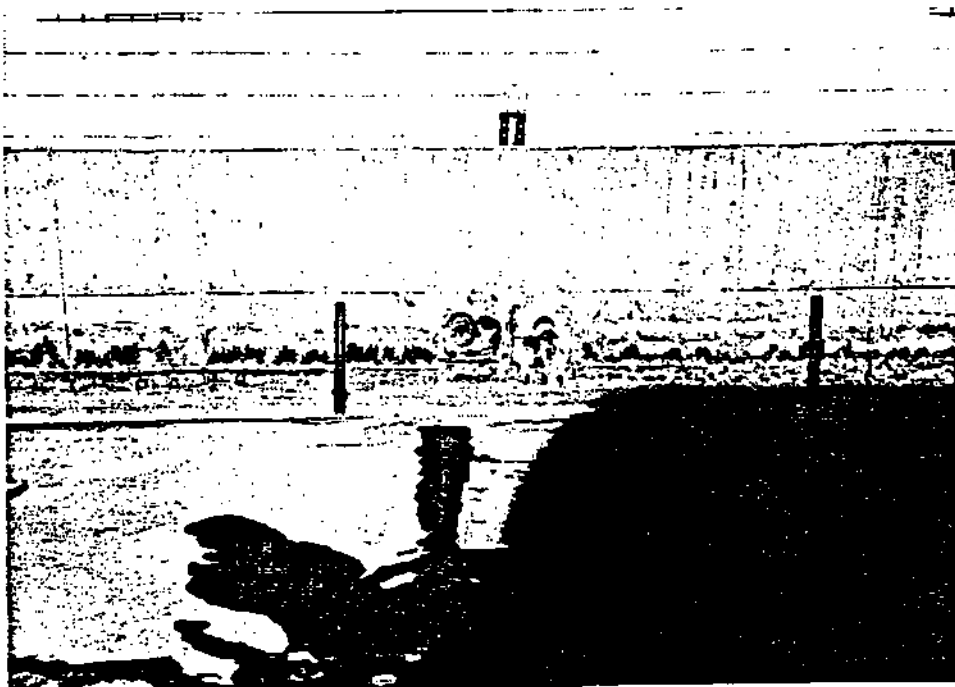
Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443



Photographer/Witness M. Lunsford

Date 11/16/93

Time

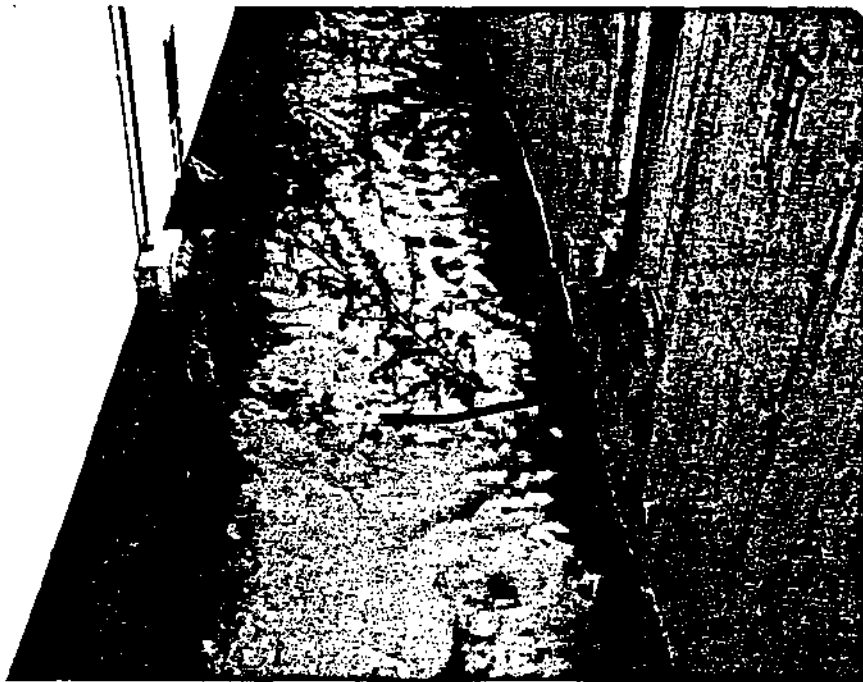
Direction

North

Description Holes in center of berm wall of pregnant tank storage
area where pipes led into main building.

Photo No.

44



Photographer/Witness M. Lunsford

Date 11/16/93

Time

Direction

East

Description Main building and pregnant tank storage area berm walls are
at left and right, respectively. Pipes led between the holes in the wall.

Page 22

Of 24



Photo No.

45



Site Name:

Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443

Photographer/Witness M. Lunsford

Date 11/16/93

Time _____

Direction East

Description Gutter and downspout at southwest corner of main building.

Photo No.

46



Photographer/Witness M. Lunsford

Date 11/16/93

Time _____

Direction ESE

Description Gutter and downspout at corner of building by the northwest sump. The broken off downspout lies in the sump.

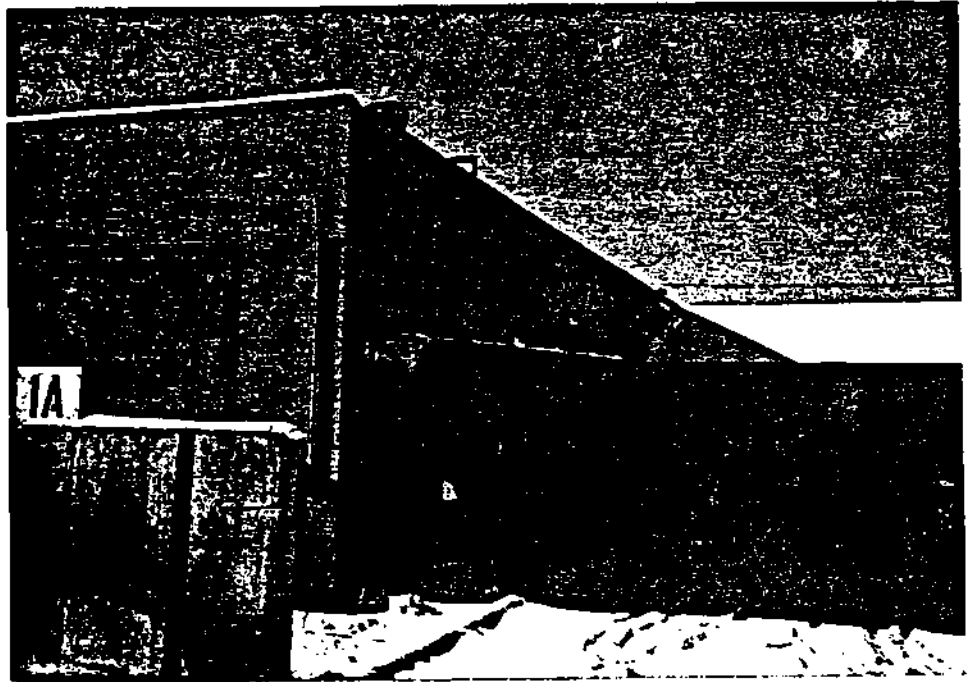
Page 23

Of 24



Photo No.

47



Site Name:

Calmet

Location:

Fountain, CO

CERCLIS #:

COD983767443

Photographer/Witness M. Lunsford

Date 11/16/93

Time

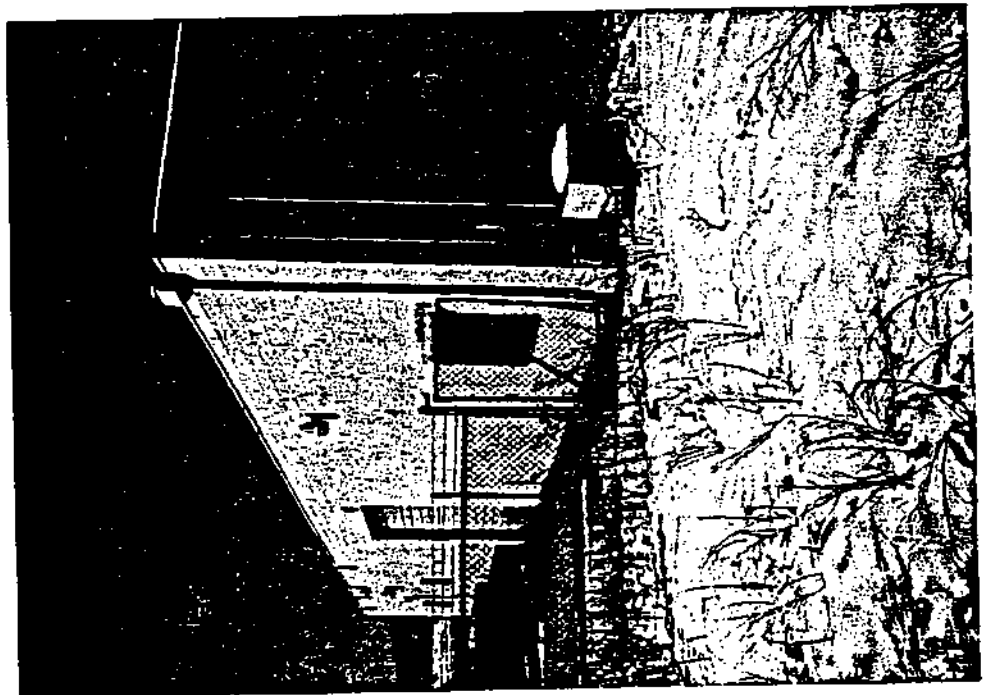
Direction

WSW

Description Gutter and downspout at northeast corner of building.

Photo No.

48



Photographer/Witness M. Lunsford

Date 11/16/93

Time

Direction

WNW

Description Gutter and downspout at southeast corner of main building.

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Of 24

TARGET SHEET
EPA REGION VIII
SUPERFUND DOCUMENT MANAGEMENT SYSTEM

DOCUMENT NUMBER: 447770

SITE NAME: CALMET

DOCUMENT DATE: 09/14/1994

DOCUMENT NOT SCANNED

Due to one of the following reasons:

- ☐ PHOTOGRAPHS
- ☐ 3-DIMENSIONAL
- ☐ OVERSIZED
- ☐ AUDIO/VISUAL
- ☐ PERMANENTLY BOUND DOCUMENTS
- ☐ POOR LEGIBILITY
- ☐ OTHER
- ☐ NOT AVAILABLE
- ☒ TYPES OF DOCUMENTS NOT TO BE SCANNED
(Data Packages, Data Validation, Sampling Data, CBI, Chain of Custody)

DOCUMENT DESCRIPTION:

APPENDIX B DATA VALIDATION REPORTS AND LABORATORY DATA
SHEETS
